

ATTACHMENT B.

BASIN CONTEXT TABLES

Attachment B. Basin Context Tables

Please see Section 2.C for a description of the purpose for these tables and the methodology used.

Rivers

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
SF Skykomish	Tye River	<ul style="list-style-type: none"> Headwaters Area for SF Skykomish Highway 2, other roads, powerline rights of way, BNSF Railroad, and townsites have constricted the floodplain. USFS ownership predominates and much (most?) is in protected wilderness status 	<ul style="list-style-type: none"> Intact for instream artificial barriers Moderately degraded due to water temperatures Data gap for sediment, hydrology, and Wetlands/Riparian Zone and Shoreline Vegetation/LWD shoreline condition and floodplain connectivity 	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with low levels of rural residential development concentrated in lower reaches.	H
	Foss River	<ul style="list-style-type: none"> Headwaters Area for SF Skykomish Majority (77%) of subbasin in Alpine Lakes Wilderness Very little development and river is highly connected to floodplain 	<ul style="list-style-type: none"> Intact for instream artificial barriers, sediment, water quality and shoreline condition and floodplain connectivity Moderately degraded for Wetlands/Riparian Zone and Shoreline Vegetation/LWD Data gap for hydrology but is probably intact and comparable to undisturbed conditions 	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p>	Mostly forestry or protected status with low levels of rural residential development concentrated in lower reaches.	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					LMPHA: NO Other: coho salmon, rainbow trout (resident), cutthroat trout		
	Beckler River	<ul style="list-style-type: none"> Mostly in USFS ownership LWD and sediment processes heavily affected from past logging and road impacts Rapid River (LB tributary) still recovering from logging and a fire 	<ul style="list-style-type: none"> Intact for instream artificial barriers and shoreline condition and floodplain connectivity Degraded for sediment and LWD Hydrology is a Data Gap, but some evidence that past logging and road building in Rain-on-Snow zones has altered peak flows 	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	SF Skykomish – Miller River to confluence of Tye and Foss Rivers	<ul style="list-style-type: none"> Town of Skykomish at upstream end of reach Water quality concerns due to toxics in soils, groundwater and surface waters near BNSF oil storage facility near town of Skykomish and mines near Money Creek contributing metals in the river. Much (~39%) of river shoreline disconnected from floodplain by encroachment from roads, railroads and development in town of Baring Hydrology may be moderately impaired as indicated by 16% 	<ul style="list-style-type: none"> Intact for instream artificial barriers Moderately degraded for water quality (BNSF oil storage facility and mines is an EPA superfund site) and for vegetation and LWD Degraded for shoreline connection and floodplain connectivity Data gap for sediment and hydrology 	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p>	Mostly forestry or protected status with low levels of residential development concentrated in lower reaches.	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
		<p>vegetation disturbance, greater than the 12% level recommended by USFS forest plan</p> <ul style="list-style-type: none"> Majority (~70%) of sub-basin in early to mid-seral stages and only 30% in old seral (old growth) conditions LWD recruitment needs not being fully met by hardwood riparian stands. 			Other: coho salmon, rainbow trout (resident), cutthroat trout		
	SF Skykomish - King County Boundary to the Miller River	<ul style="list-style-type: none"> Majority (~70%) of sub-basin in early to mid-seral stages and only 30% in late seral (old growth) conditions. Much (~42%) of river shoreline disconnected from floodplain by encroachment from roads, railroads and development in town of Baring 	<ul style="list-style-type: none"> Intact for instream artificial barriers and hydrology Moderately degraded for water quality (BNSF oil storage facility and mines) and for vegetation and LWD Degraded for shoreline connection and floodplain connectivity 	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with low levels of rural residential development concentrated in lower reaches.	H
	Maloney Creek	<ul style="list-style-type: none"> Largely undeveloped and un-logged Steep drainage Lowermost reach is a delta fan affected by residential development in town of Skykomish and has aggradations of deep alluvial deposits near mouth following 	Not rated	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p>	Mostly forestry or protected status with low levels of rural residential development concentrated in lower reaches	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
		flood events (late 1995/early 1996) greatly diminishing channel capacity and ability to pass flood waters			WHN Present: NO HFWVA Present: YES LMPHA: NO Other: coho salmon, rainbow trout (resident), cutthroat trout		
	Miller River	<ul style="list-style-type: none"> Majority (79%) of basin in Alpine Lakes Wilderness no logging in remaining area since 1990 Development limited to a few formal camping areas and small residences near mouth. Lower river suffers from historic LWD removal by USFS Lowermost reaches of river channel is widening causing concern for stability of Old Cascade Highway 	<ul style="list-style-type: none"> Intact for instream artificial barriers, water quality, hydrology and shoreline condition and floodplain connectivity Moderately degraded for sediment Data gap for LWD loading, but believed low due to active removal by USFS for flood control 	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with low levels of rural residential development concentrated in lower reaches	H
	Money Creek	<ul style="list-style-type: none"> Almost entirely in USFS lands with some historic logging and road building activity No residential development Old mines present in drainage, may be contributing to metals in river 	Not rated	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p>	Mostly forestry or protected status with little or no development	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					<p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>		
	RB Tributary WRIA # 07.1327	<ul style="list-style-type: none"> No development 	Not rated	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	Low Creek	<ul style="list-style-type: none"> No development 	Not rated	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p>	Mostly forestry or protected status with little or no development	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					LMPHA: NO Other: coho salmon, rainbow trout (resident), cutthroat trout		
	Index creek	<ul style="list-style-type: none"> Scattered, low-density residential development in lower reaches 	Not rated	H	<p>Aquatic SOC: Harlequin Duck, chinook salmon, bull trout, steelhead trout</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with low levels of rural residential development concentrated in lower reaches	H
Upper Snoqualmie (above Falls)	SF Snoqualmie – Upstream of USFS boundary	<ul style="list-style-type: none"> Land in checkerboard private or federal ownership managed for timber, recreation, and wilderness. On WDOE 303(d) list for temperature and pH Interstate 90 corridor Old landslides and sediment inputs evident along valley wall and in tributary drainages due to logging and forest roads in Rain-on-Snow zones. 	<ul style="list-style-type: none"> Data gap for instream artificial barriers, sediment and hydrology Moderately degraded for Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to 49% of stream miles w/ no or immature trees, and for shoreline conditions and floodplain connectivity, due to ~ 10-20% of stream miles affected by armoring, proximity to I-90 and frequency of road crossings. Degraded for water quality due to 303(d) listing and run-off from I-90. 	Mostly H, some M	<p>Aquatic SOC: Barrow's goldeneye, bull trout (possible, but not confirmed)</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p>	Mostly forestry or protected status with little or no development	H

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					Other: coho salmon, rainbow trout (resident), cutthroat trout		
	SF Snoqualmie – mouth to USFS Boundary	<ul style="list-style-type: none"> Interstate 90, City of North Bend, and scattered, rural residential development in lower reaches Private timber lands between developed areas and USFS boundary Twin Falls Hydro project On WDOE 303(d) list for temperature and pH An estimated 62% of stream miles have no or mostly immature trees in riparian areas 	<p>(WRIA 7 analysis for this reach includes City of North Bend)</p> <ul style="list-style-type: none"> Data gap for instream artificial barriers and sediment. However, there are no known artificial barriers in SMP reaches and aerial evidence of sediment from road failures, stream bank erosion and dam-break floods. Moderately degraded for hydrology (est. TIA ~ 8.5%) and for shoreline conditions and floodplain connectivity due to about 10-20% of banks w/ armoring, mostly in or near City of North Bend, and proximity to I-90 for about three miles. Degraded for water quality, due to run-off from I-90, and for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to relatively high amount of riparian areas with no or mostly immature trees. 	Mostly M, some H	<p>Aquatic SOC: Barrow's goldeneye, bull trout (possible, but not confirmed)</p> <p>Terrestrial SOC: N. Spotted owl, marbled murrelet, bald eagle, fisher, grizzly bear, northern goshawk, Townsend's big-eared bat</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	MF Snoqualmie –upstream of Pratt River	Primarily USFS land managed for forest, recreation and wildness values	<ul style="list-style-type: none"> Data gap for instream artificial barriers, sediment, hydrology and water quality Intact for Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to ninety-nine percent of land in mid to late seral stages, and Shoreline Condition and Floodplain Connectivity because no development. 	H	<p>Aquatic SOC: Bull trout (possible, but not confirmed) no other species listed</p> <p>Terrestrial SOC: Northern spotted owl, marbled murrelet, osprey, wolverine</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H

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	Pratt River	Primarily USFS land managed for timber harvest, recreation and wildness values.	<ul style="list-style-type: none"> Data gap for instream artificial barriers, sediment, hydrology and water quality Intact for Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to ninety-nine percent of land in mid to late seral stages, and Shoreline Condition and Floodplain Connectivity because no development. 	H	<p>Aquatic SOC: Bull trout (possible, but not confirmed) no other species listed</p> <p>Terrestrial SOC: Northern spotted owl, marbled murrelet, osprey, wolverine</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	MF Snoqualmie – mouth to Pratt River	<ul style="list-style-type: none"> Scattered rural residential Confluence and sediment depositional area for NF and MF includes the Three Forks Natural Area 	<ul style="list-style-type: none"> Data gap for sediment, hydrology and water quality. Potential for sediment from mass wasting rated low for 89% of basin. Moderately degraded for instream artificial barriers, due to culverts on smaller tributaries (not SMP shorelines), and for shoreline condition and floodplain connectivity, due to bank hardening along lowermost three miles of the reach, presence of road along much of valley and moderate road density. Degraded for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to low LWD levels and est. 47% of stream miles with no or mostly immature trees. 	H	<p>Aquatic SOC: Bull trout (possible, but not confirmed) no other species listed</p> <p>Terrestrial SOC: Northern spotted owl, marbled murrelet, osprey, wolverine</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	North Fork Snoqualmie	Mostly timber production w/ some rural residential in lowermost reaches	<ul style="list-style-type: none"> Data gap for instream artificial barriers, sediment, hydrology, water quality and Wetlands/Riparian Zone and Shoreline Vegetation/LWD Moderately degraded for Shoreline Condition and Floodplain Connectivity because of 	H	<p>Aquatic SOC: Common loon, tailed frog, bull trout (possible, but not confirmed)</p> <p>Terrestrial SOC: Northern Spotted Owl, marbled</p>	Mostly forestry or protected status with little or no development	H

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			development in the lower two miles of the river and extensive system of logging roads upstream.		murrelet, golden eagle, peregrine falcon, northern goshawk, WHN Present: YES HFWVA Present: YES LMPHA: YES Other: rainbow trout (resident), cutthroat trout		
	Coal Creek Upper - Snoqualmie mainstem between Falls and confluence of NF and MF	Cities of North Bend and Snoqualmie, residential, scattered light agriculture, commercial and industrial along valley floor	<ul style="list-style-type: none"> Data gap for instream artificial barriers, sediment, water quality and Shoreline Condition and Floodplain Connectivity. But Shoreline Condition and Floodplain Connectivity affected by an estimated 2.6 road crossings/mile and major roads along valley floor. Moderately degraded for hydrology due to an estimated 8% TIA Degraded for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to 70% of stream miles with no or mostly immature vegetation 	Mostly M, some L	Aquatic SOC: Bull trout (possible, but not confirmed) Terrestrial SOC: Bald eagle, great blue heron, osprey, red-tailed hawk WHN Present: YES HFWVA Present: YES LMPHA: NO Other: rainbow trout (resident), cutthroat trout	Mix of forestry, protected status in headwaters and urban , suburban, and rural development in upstream subbasin	M
Lower Snoqualmie (below Falls)	Coal Creek Lower – Snoqualmie mainstem from Raging River to Snoqualmie Falls	Mixed rural residential, recreation and agriculture.	<ul style="list-style-type: none"> Data gap for Instream Artificial Barriers, Sediment Moderately degraded for Hydrology because TIA estimated as 7.5% Degraded for Water Quality (frequent exceedence of State standards for TP and fecal coliform in Kimble Creek), Wetlands/Riparian Zone and Shoreline Vegetation/LWD, because seventy percent of stream miles w/ no or immature trees, and Shoreline Condition and Floodplain 	Mostly H, some M and L	Aquatic SOC: Chinook salmon, bull trout, steelhead Terrestrial SOC: Bald eagle, great blue heron, green heron, osprey, red-tailed hawk WHN Present: YES HFWVA Present: YES	Mix of forestry, protected status in headwaters and urban , suburban, and rural development in upstream subbasin	M

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			Connectivity, because sixty-four percent of floodplain miles are confined by shoreline hardening		LMPHA: NO Other: coho, sockeye, chum and pink salmon, rainbow trout (resident), cutthroat trout		
	Tokul Creek	<ul style="list-style-type: none"> Ninety-six percent of watershed is in private timber ownership WDFW hatchery at mouth; hatchery weir blocks fish. 	<ul style="list-style-type: none"> Data gap for hydrology Intact for water quality, Wetlands/Riparian Zone and Shoreline Vegetation/LWD, and Shoreline Condition and Floodplain Connectivity Moderately degraded for sediment Degraded for artificial barriers due to weir at hatchery @ RM 1 	H	<p>Aquatic SOC: Common loon, Beller's ground beetle, Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: None listed</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	Snoqualmie River – mainstem from Tolt River to Raging River	Fall City, agriculture and a broad floodplain dominate this reach	<ul style="list-style-type: none"> Moderately degraded for Sediment (about 10% of banks have heavy erosion from human or livestock access), Hydrology (TIA estimated @ 7%), Degraded for Instream Artificial Barriers (but no barriers in mainstem), Water Quality (303(d) list for temperature, dissolved oxygen, fecal coliform and pH), Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to domination of riparian areas by grass, brush or only a thin line of trees and low levels of LWD, and Shoreline Condition and Floodplain Connectivity due to armoring along 37.9% of river banks. 	Mostly H, some M	<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Bald eagle, great blue heron, green heron, osprey, red-tailed hawk</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: mussels, coho, sockeye, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mix of forestry, protected status in headwaters and urban, suburban, and rural development in proximity to subbasin	M

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	Raging River	Mostly forestry with scattered rural residential in mid-reaches and urban in lowermost mile.	<ul style="list-style-type: none"> Data gap for Hydrology, but considerable historic timber harvest in the Rain on Snow zone, Water Quality, but I-90 and other valley roads may be a problem and elevated fecal coliform, temperature and pH have been measured, , Moderately degraded for sediment, based on intrusion of fines in salmon redds, Degraded for Instream Artificial Barriers, but none on mainstem, although the delta can become very low and be a seasonal barrier, Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due logging in headwaters and riparian development, and low levels of LWD, and for Shoreline Condition and Floodplain Connectivity due to levees and much armoring along river up to I-90 and scattered armoring up to SR 18, and almost no side channel habitat downstream of I-90. 		<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: None listed</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mix of forestry or protected status in headwaters and moderate levels of rural and suburban, development concentrated in lower reaches	H
	Griffin Creek	Most of watershed managed for timber production; rural residential and agriculture land use in lowermost reaches	<ul style="list-style-type: none"> Data gap for Hydrology Intact for Water Quality Moderately Degraded for Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due logging road in riparian area, dominance of alders in riparian areas and low LWD levels throughout the system, and for Shoreline Condition and Floodplain Connectivity due to logging road encroachment of riparian and channel areas and low channel complexity in lowermost five miles. Degraded for Artificial Instream Barriers (due to culverts on tributaries), Sediment due to roads and eroding banks along ~ 40% of slopes in lower three miles, where residential and agricultural uses predominate. 	H	<p>Aquatic SOC: Tailed frog, chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: None listed</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with low levels of rural development and agriculture concentrated in lower reaches	H
	North Fork Tolt River	Catchment managed for timber, wilderness and recreation	<ul style="list-style-type: none"> Data gap for Sediment, but excessive sediment and channel widening are evident probably due to historic logging and road building both of 	H	<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p>	Mostly forestry or protected status with little or no development	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
			<ul style="list-style-type: none"> which are expected to decline in future. Intact for Hydrology, Water Quality and Shoreline Condition and Floodplain Connectivity Moderately degraded for Artificial Instream Barriers (but none on mainstem channel) Degraded for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to high levels of hardwoods and small/immature conifers in riparian areas 		<p>Terrestrial SOC: Northern Spotted owl</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>		
	South Fork Tolt – above Dam	Managed as a municipal watershed for timber and water production and quality	<ul style="list-style-type: none"> Data gap for Hydrology, Water Quality and for Shoreline Condition and Floodplain Connectivity, the latter due to lack of criterion for impounded waters Intact for Artificial Instream barriers, Degraded for Sediment, due to Dam, and for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to dominance of immature trees in riparian areas 	H	<p>Aquatic SOC: Common loon</p> <p>Terrestrial SOC: Common loon</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: Rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	South Fork Tolt – below Dam	Reach immediately downstream of dam which alters water, sediment and LWD processes. Managed for timber and natural resource values	<ul style="list-style-type: none"> Intact for Artificial Instream Barriers, Water Quality and for Shoreline Condition and Floodplain Connectivity Degraded for Sediment and Hydrology due to Dam effects and for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to predominance of immature trees in riparian areas 	H	<p>Aquatic SOC: Common loon, chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Common loon</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development. Dam affects are present.	M
	Tolt River –	Encroachment on channel and	<ul style="list-style-type: none"> Data gap for Wetlands/Riparian Zone and 	H	Aquatic SOC: Chinook	Mostly forestry or protected	H

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	mouth to confluence of North and South Forks	floodplain concentrated in lower reaches (City of Carnation) and a few areas upstream of City. Bedrock canyon starts about RM 6.	<p>Shoreline Vegetation/LWD, but LWD levels and riparian vegetation likely sub-par due to historic logging and river management activities</p> <ul style="list-style-type: none"> • Intact for Artificial Instream barriers, Water Quality • Moderately degraded for Sediment due to historic logging, • Degraded for Hydrology due to effect of SF Tolt Dam, and for Shoreline Condition and Floodplain Connectivity due to more than 20% of shoreline being hardened. 		<p>salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Northern Spotted Owl, marbled murrelet, golden eagle, peregrine falcon, northern goshawk,</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: mussels (Stoessel Creek) coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	status with low levels of rural, urban development and/or agriculture concentrated in lower reaches. Dam affects are moderated by distance.	
	Snoqualmie – Tuck Creek to Tolt River	Agriculture, two cities (Duvall and Carnation) and supporting infrastructure (roads, power, phone, water and sewer utilities) dominate the floodplain and encroach on the river channel in many places of this reach. However, many areas (Stillwater and Chinook Bend) in moderately high condition w/ much restoration potential.	<ul style="list-style-type: none"> • Moderately degraded for Sediment, due to heavy erosion from human and cattle access along 11.7% of shoreline, and for Hydrology, due to TIA ~ 8% and significant water well extractions. • Degraded for Artificial instream Barriers, due to culverts on tributaries, Water Quality, due 303(d) listing for temperature and also beyond state standards for dissolved oxygen, bacteria and pH, Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to small or non-existent forested riparian areas (only 25% had forested buffers at least 200 feet in width), few large trees, low levels of LWD, and for Shoreline Condition and Floodplain Connectivity due to bank hardening along 31.6% of the left bank and 25.4% of the right bank. 	Mostly H, some M	<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Bald eagle, great blue heron, green heron, osprey, red-tailed hawk</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho, sockeye, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mix of forestry, protected status in headwaters and urban, suburban, rural development and agriculture in proximity to subbasin	M
	Harris Creek	Mostly rural residential development w/ some forest production lands in	<ul style="list-style-type: none"> • Data gap for Sediment and Water Quality • Intact for Hydrology (TIA ~ 6.5%). 	H	Aquatic SOC: Chinook salmon, bull trout, steelhead	Mostly forestry or protected status with low levels of rural	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
		headwaters	<ul style="list-style-type: none"> Moderately degraded for Shoreline Condition and Floodplain Connectivity due to road crossings and roads in or near riparian areas. Degraded for Artificial Instream Barriers, due to culverts, including three on mainstem channel, Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to 71% of riparian with no or mostly immature trees. 		<p>Terrestrial SOC: None listed</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: mussels, coho and chum salmon, rainbow trout (resident), cutthroat trout</p>	development and agriculture mostly concentrated in lower reaches	
	Snoqualmie – Mouth to Tuck Creek (includes portion of Snohomish County)	City of Duvall at upstream end of reach and agriculture dominate in this area.	<ul style="list-style-type: none"> Data gap for Sediment Intact for Hydrology (TIA ~ 6%) Degraded for Artificial Instream Barriers, due to culverts on tributaries, Water Quality, 303(d) list for temperature, but also high bacterial counts and low dissolved oxygen levels have been noted, Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to only 25% of bank w/ 200 feet or more of forest, low LWD levels and non-native vegetation, and for Shoreline Condition and Floodplain Connectivity due to 40% of channel confined artificially and 71% of floodplain de-coupled based on historic river conditions. 	Mostly H, some M and L	<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Bald eagle, great blue heron, green heron, osprey, red-tailed hawk</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho, sockeye, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mix of forestry, protected status in headwaters and moderate levels of urban, suburban, rural development and agriculture in proximity to subbasin	M
	Cherry Creek	Mostly forested w/ scattered rural residential and extensive agriculture in lowermost reaches	<ul style="list-style-type: none"> Data Gap for sediment Intact for Hydrology (TIA ~ 3.5%) Degraded for Artificial Instream Barriers, due to culverts, Water Quality, due to high temperatures, bacteria and nutrients, Wetlands/Riparian Zone and Shoreline Vegetation/LWD, due to many ditched and drained areas and no or immature trees in riparian areas, and for Shoreline Condition and Floodplain Connectivity due to extensive diking 	H	<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Osprey</p> <p>WHN Present: NO</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p>	Mostly forestry or protected status with low levels of rural development and/or agriculture concentrated in lower reaches	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
			and hardening in lower reaches.		Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout		
	Patterson Creek	Catchment dominated by mix of forest cover and scattered sub-urban and rural development	<ul style="list-style-type: none"> Data gap for Shoreline Condition and Floodplain Connectivity. Intact for Hydrology. Degraded for Instream Artificial Barriers due to culverts, Sediment, due to upland development, Water Quality due to numerous non-point pollution sources, such as roads and developments, and for Wetlands/Riparian Zone and Shoreline Vegetation/LWD due to over 70% of riparian area with no or mostly immature trees and very low LWD levels. 	H	<p>Aquatic SOC: Chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: None listed</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho salmon, rainbow trout (resident), cutthroat trout</p>	Rural residential and suburban development scattered through-out with agriculture in lower reaches.	M
Sammamish	Issaquah Creek - City of Issaquah to SR18	Mix of urban in lower portion of watershed and rural residential and forestry uses in mid and upper watershed areas. Headwaters (Carey and Holder creeks) of main and east branches are in protected state, city and county lands.	Predominately high watershed functioning with moderate functioning in lower reaches in or near City of Issaquah.	H	<p>Aquatic SOC: Tailed frog, chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Bald eagle, great blue heron, osprey</p> <p>WHN Present: Yes</p> <p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho, sockeye and kokanee salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with scattered rural residential and urban concentrated in lower reaches	H
	Bear Creek	Mix of conditions ranging from rural residential and scattered suburban development in upper watershed and urban land uses including City of Redmond in lowermost reaches.	Predominately high functioning with moderate functioning in lower reaches of higher density unincorporated King County and City of Redmond.	H	<p>Aquatic SOC: Tailed frog, chinook salmon, bull trout, steelhead</p> <p>Terrestrial SOC: Mountain</p>	Mostly rural residential with good forest cover; urban and sub-urban land uses concentrated in lower reaches	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
		Mostly well-forested and with well-vegetated riparian areas in most places.			quail and great blue heron WHN Present: Yes HFWVA Present: YES LMPHA: NO Other: mussels, coho, sockeye and kokanee salmon, rainbow trout (resident), cutthroat trout		
	Little Bear Creek	Mostly suburban with rural residential and urban conditions	Moderate functioning	M	Aquatic SOC: chinook salmon, bull trout, steelhead Terrestrial SOC: None listed WHN Present: NO HFWVA Present: NO LMPHA: NO Other: coho, sockeye and kokanee salmon, rainbow trout (resident), cutthroat trout	Mix of urban, suburban and rural residential throughout the basin	M
	North Creek	Mostly suburban with rural and urban conditions	Moderate functioning	M	Aquatic SOC: chinook salmon, bull trout, steelhead Terrestrial SOC: None listed WHN Present: NO HFWVA Present: NO LMPHA: NO Other: coho, sockeye and kokanee salmon, rainbow	Mix of urban, suburban and rural residential throughout the basin	M

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					trout (resident), cutthroat trout		
	Swamp	Mostly urban and suburban with scattered rural residential	Low Watershed Functioning	M	Aquatic SOC: chinook salmon, bull trout, steelhead Terrestrial SOC: None listed WHN Present: NO HFWVA Present: NO LMPHA: NO Other: coho, sockeye and kokanee salmon, rainbow trout (resident), cutthroat trout	Mix of urban and sub-urban throughout the basin	L
	Sammamish River	Mix of urban, suburban, commercial agriculture, recreation corridor. Contains and is downstream of several cities. Historic river channel channelized and, especially in lowermost reaches, used for motorized boats.	Low Functioning	L	Aquatic SOC: chinook salmon, bull trout, steelhead Terrestrial SOC: Bald eagle, great blue heron, purple martin and red-tailed hawk WHN Present: NO HFWVA Present: NO LMPHA: NO Other: coho, sockeye and kokanee salmon, rainbow trout (resident), cutthroat trout	Within and downstream of major urban areas and floodplain and channel highly modified	L
Lake WA	May Creek	Mix of rural residential, agriculture, urban and, in steeper headwaters, protected forest lands	Not rated	H	Aquatic SOC: chinook salmon, bull trout, steelhead Terrestrial SOC: Pileated woodpecker WHN Present: NO	Headwaters in forestry and protected status and lower reach in ravine; rural residential	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					<p>HFVVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho, sockeye and kokanee salmon, rainbow trout (resident), cutthroat trout</p>		
Cedar River	Upper Cedar River – above Landsburg	Municipal watershed managed for water quantity and quality and habitat values. Past effects of logging are present but watershed will be managed for high quality habitat rather than timber. Channel and riparian conditions moderately affected by effects of water supply dam on flood flows.	Not rated	Not rated	<p>Aquatic SOC: Barrow's goldeneye, common loon, harlequin duck, tailed frog and bull trout</p> <p>Terrestrial SOC: Northern spotted owl, lynx, osprey, marbled murrelet, peregrine falcon, northern goshawk</p> <p>WHN Present: YES</p> <p>HFVVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: pygmy whitefish, rainbow trout (resident), cutthroat trout</p>	Municipal watershed in protected status in headwaters little rural residential development	H
	Middle Cedar River (SR18 to Landsburg; Reaches 12-18)	Mostly rural, forestry and recreation-based land uses. Channel and riparian conditions moderately affected by effects of water supply dam on flood flows.	High Watershed functioning	H	<p>Aquatic SOC: Tailed frog, wood duck, chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Red-tailed hawk and bald eagle</p> <p>WHN Present: YES</p> <p>HFVVA Present: YES</p>	Municipal watershed in protected status in headwaters little rural residential development	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					LMPHA: YES Other: coho and sockeye salmon, rainbow trout (resident), cutthroat trout		
	Rock Creek	Rural and forest land uses. Catchment dominated by outwash soils. Channel has very high quality habitat.	High Watershed Functioning	H	Aquatic SOC: Tailed frog, wood duck, chinook salmon, bull trout and steelhead Terrestrial SOC: Red-tailed hawk and bald eagle WHN Present: YES HFWVA Present: YES LMPHA: YES Other: coho and sockeye salmon, rainbow trout (resident), cutthroat trout	Mostly rural residential, small amount of suburban development with good forest cover	H
	Lower Cedar River (Mouth to SR18; Reaches 1-11)	Mix of rural residential with urban (City of Renton) in lowermost reaches. Lowermost reaches are heavily channelised and contained in artificial channel.	Moderate Watershed Functioning	Mix of H and L	Aquatic SOC: Tailed frog, wood duck, chinook salmon, bull trout and steelhead Terrestrial SOC: Red-tailed hawk and bald eagle WHN Present: YES HFWVA Present: YES LMPHA: NO Other: coho and sockeye salmon, rainbow trout (resident), cutthroat trout	Two-thirds of upstream area in protected status in headwaters with rural residential and scattered suburban in adjacent upstream reach.	M
Green River	Green/Duwa	Mix of mostly high density urban,	• Good for fish access	L	Aquatic SOC: Chinook	Downstream of and within	L

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	mish River Estuary (Mouth to Black River; RM 0.0 to 11.0)	commercial, industrial land uses. Channel and upland and riparian vegetation have been heavily altered.	<ul style="list-style-type: none"> Fair for water temperature Poor for side channels/floodplain, sediment quality, road density, bank/streambed/channel stability, instream LWD, riparian, and hydro changes/low flow Data gap for sediment quantity, pool habitat, impervious surface, hydro high flows, dissolved oxygen, nutrients, toxins, and pH 		<p>salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Great blue heron, osprey and peregrine falcon</p> <p>WHN Present: NO</p> <p>HFWVA Present: NO</p> <p>LMPHA: NO</p> <p>Other: coho, chum, pink and sockeye salmon, rainbow trout (resident), cutthroat trout</p>	extensive urban, suburban, agricultural land uses. HH Dam has large effect.	
	Lower Green River (Black River to The Auburn Narrows; RM 11.0 to 32.0)	Mix of mostly agriculture and urban land uses.	<ul style="list-style-type: none"> Good for fish access Fair for dissolved oxygen Poor for sediment quantity, sediment quality, side channels/floodplain, road density, bank/streambed/channel stability, instream LWD, riparian, temperature, nutrients, toxins, and pH, and hydro changes/low flow Data gap for pool habitat, hydro high flows 	L	<p>Aquatic SOC: Chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Great blue heron, osprey, mountain quail, red-tailed hawk, bald eagle, and pileated woodpecker</p> <p>WHN Present: NO</p> <p>HFWVA Present: NO</p> <p>LMPHA: NO</p> <p>Other: coho, chum, pink and sockeye salmon, rainbow trout (resident), cutthroat trout</p>	Downstream of and within extensive urban, suburban, agricultural land uses. HH Dam has large effect.	L
	Middle Green River (The Auburn Narrows to	Mix of rural, agriculture, scattered urban, recreation and, in gorge, undeveloped lands. HHD has large effect on flows, sediment and LWD.	<ul style="list-style-type: none"> Good for fish access, riparian (RM 45-58) Fair for side channels/floodplain,, oxygen and riparian (RMs 38-40, 42-45, 58 - 61) Poor for pool habitat, sediment quantity, 	H	<p>Aquatic SOC: Chinook salmon, bull trout and steelhead</p>	Headwaters in forestry or protected. Large effect of HH Dam	M

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	Howard Hansen Dam; RM 32 to 64.5)		sediment quality, road density, bank/streambed/channel stability, instream LWD, riparian (RMs 32-38, 40-42, 61-64.5), temperature, hydro high flows and hydro low flows <ul style="list-style-type: none"> Data gap for impervious surface, nutrients, toxins, and pH , 		Terrestrial SOC: Green heron, osprey and mountain quail WHN Present: YES HFWVA Present: YES LMPHA: YES Other: coho, chum, pink and sockeye salmon, rainbow trout (resident), cutthroat trout		
	Green River (above Howard Hansen Dam; RM 64.5)	Dam and reservoir management and logging.	<ul style="list-style-type: none"> Good for oxygen Fair for side channels/floodplain, Instream LWD, and temperature Poor for fish access, sediment quantity , sediment quality, road density, bank/streambed/channel stability, riparian and hydro high flows Data gap for pool habitat, impervious surface, nutrients, toxins, and pH and hydro low flows 	Not rated	Aquatic SOC: Common loon, tailed frog, harlequin duck, chinook salmon, bull trout(possible) and steelhead Terrestrial SOC: Northern spotted owl, golden eagle, northern goshawk, Larch Mountain salamander, Townsend's big-eared bat WHN Present: YES HFWVA Present: YES LMPHA: YES Other: coho salmon, rainbow trout (resident), cutthroat trout	Intensive forestry but no development.	H
	Soos Creek	Mix of urban, suburban and rural land uses.	<ul style="list-style-type: none"> Good for fish access and nutrients, toxins, and pH Fair for riparian, sediment quality, impervious (in Soosette) and bank/streambed/channel stability Poor for sediment quantity, temperature, oxygen, hydro low flows 	H	Aquatic SOC: chinook salmon, bull trout and steelhead Terrestrial SOC: None listed WHN Present: YES	Mix of urban, sub-urban and rural land uses	M

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			<ul style="list-style-type: none"> Data gap for side channels/floodplain, road density, instream LWD, pool habitat and hydro high flows 		<p>HFWVA Present: YES</p> <p>LMPHA: NO</p> <p>Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>		
	Newaukum Creek	Mix of urban, agriculture, suburban, rural and forestry land uses.	<ul style="list-style-type: none"> Good for fish access, side channels/floodplain and nutrients, toxins, and pH Fair for riparian (RM 0 -3) and temperature Poor for road density, bank/streambed/channel stability, instream LWD, pool habitat, riparian (RM 3 – 10), oxygen and hydro low flows Data gap for sediment quantity, sediment quality, impervious surfaces, and hydro high flows 	H	<p>Aquatic SOC: chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Bald eagle</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mix of urban, sub-urban, rural and agricultural land uses	M
White River	Greenwater River	Mostly forestry w/ rural residential near mouth	<ul style="list-style-type: none"> Good for fish access, riparian (upper watershed), Fair for side channels/floodplain, sediment quality, riparian (lower watershed), temperature riparian and hydro low flows Poor for sediment quantity, road density,, bank/streambed/channel stability, instream LWD and Pool habitat Data gap for impervious surfaces, hydro low flows, oxygen, nutrients, toxins, and pH 	H	<p>Aquatic SOC: Harlequin duck, tailed frog, chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Northern spotted owl</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with relatively low levels of rural residential in lowermost reaches.	H
	White River	Mostly forestry with scattered rural	<ul style="list-style-type: none"> Good for hydro high flows above Huckleberry 	H	<p>Aquatic SOC: Harlequin duck,</p>	Mostly forestry or protected	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
	– above Mud Mountain Dam	residential and encroachment by valley-roads	<p>creek</p> <ul style="list-style-type: none"> Fair for fish access Fait to Poor for bank/streambed/channel stability and riparian, Poor for instream LWD, temperature (below Greenwater), side channels/floodplain (near town of Greenwater and where Hwy 410 encroaches), road density, nutrients, toxins, pH and for temperature from Greenwater to WF White Data gap for sediment quantity, sediment quality, pool habitat, impervious surfaces and oxygen 		<p>tailed frog, chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Northern spotted owl</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	status with little or no development	
	Scatter Creek	Forestry and no development	<ul style="list-style-type: none"> Good for fish access and side channels/floodplain Fair for none Poor for instream LWD, pool habitat, riparian, temperature, hydro high flows, hydro low flows Data gap for sediment quantity, sediment quality, road density, bank/streambed/channel stability, impervious surfaces, oxygen, nutrients, toxins, and pH 	H	<p>Aquatic SOC: Harlequin duck, tailed frog, chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Northern spotted owl</p> <p>WHN Present: YES</p> <p>HFWVA Present: YES</p> <p>LMPHA: YES</p> <p>Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout</p>	Mostly forestry or protected status with little or no development	H
	Slippery Creek	Forestry land uses predominate.	<ul style="list-style-type: none"> Good for side channels/floodplain and temperature Fair for fish access, riparian and hydro high flows Poor for sediment quantity, bank/streambed/channel stability, instream LWD and Pool habitat 	H	<p>Aquatic SOC: Harlequin duck, tailed frog, chinook salmon, bull trout and steelhead</p> <p>Terrestrial SOC: Northern spotted owl</p>	Mostly forestry or protected status with little or no development	H

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
			<ul style="list-style-type: none"> Data gap for sediment quality, road density, hydro low flows, oxygen, nutrients, toxins, and pH 		WHN Present: YES HFWVA Present: YES LMPHA: YES Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout		
	Boise Creek	Mix of forestry in headwaters and agriculture, recreation (golf course), rural, and suburban development in mid to lower reaches.	<ul style="list-style-type: none"> Good for fish access Fair to poor for sediment quantity Poor for side channels/floodplain, instream LWD, pool habitat, riparian, temperature and hydro high flows Data gap for sediment quality, road density, bank/streambed/channel stability, oxygen, nutrients, toxins, and pH 	H	Aquatic SOC: Harlequin duck, tailed frog, chinook salmon, bull trout and steelhead Terrestrial SOC: Bald eagle, mountain quail, Vaux's swift WHN Present: YES HFWVA Present: YES LMPHA: YES Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout	Mostly forestry or protected status with suburban, rural residential and recreational impacts concentrated in mid and lower reaches	M
	White River – Upstream of Auburn to the Mud Mountain Dam	Mostly scattered rural residential development except in lower reaches where urban development (cities of Pacific and Auburn) encroach on and constrain channel and floodplain. Buckley diversion and Mud Mountain Dam affect flow, sediment and LWD. White River gorge well-protected from encroachment.	<ul style="list-style-type: none"> Fair for bank/streambed/channel stability (except near Game Farm Park) Poor for instream LWD, riparian, hydro high flows (below Huckleberry Creek), hydro low flows, nutrients, toxins, pH and bank/streambed/channel stability near Game Farm Park Data gap for sediment quantity, sediment quality, pool habitat, impervious surfaces and oxygen 	Mostly H, some M and L	Aquatic SOC: Harlequin duck, tailed frog, chinook salmon, bull trout and steelhead Terrestrial SOC: Bald eagle, mountain quail, Vaux's swift WHN Present: YES HFWVA Present: YES LMPHA: YES	Mostly rural residential with good forest cover. Cities of Auburn and Pacific affect lower reaches. Combination of Buckley Diversion and Mud Mountain Dam affects low and high flows conditions of downstream reaches.	M

Basin	Subbasin	Key conditions of Subbasin	WRIA or State Limiting Factors Rating(s)	CAO subbasin rating (High [H], Medium [M], Low [L])	KNOWN/MAPPED BIOLOGICAL RESOURCES (SOC=Species of Concern within 1/2mile of SMA shoreline; WHN=Wildlife Habitat Network; HFEVA= High Forest Wildlife Value Area; LMPHA = Large mammal priority habitat area)	SUMMARY of UPSTREAM OR HEADWATER CONDITION	SUBBASIN CONTEXT RATING (Upstream or overall conditions rated as High [H], Medium [M], or Low [L])
					Other: coho, chum and pink salmon, rainbow trout (resident), cutthroat trout		

Lakes

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Alice	7	4.9	7.6	88	1	Raging River	Medium	borderline mesotrophic	2000-2006	mixed private, public	High	
Ames	7	4.4	4.8	82	3	Ames Lake	High	borderline mesotrophic	2000-2006	mixed private, public	High	
Angeline	7	0.0	0.0	88	5	Skykomish	High			Federal land	High	Drains to Delta lake.
Annette Lake	7	0.0	0.1	93	2	SFSQ020	High			Federal land	High	
Azurite	7	0.0	0.0	90	3	Skykomish	High			Federal land	High	Drains to Otter Lake.
Bass	9	6.5	48.8	70	1	MGRR012	Medium			mixed private, public	Low	High degree of Agriculture in catchment. Inlet streams channelized.
Bear	7	0.0	0.0	96	2	MFSQ016	High			Federal land	High	Drains to Deer lake.
Big Heart	7	0.0	0.1	96	5	Skykomish	High			Federal land	High	Drains to Delta lake.
Black	7	0.0	12.8	90	1	Tokul Creek	High			Forest production District	Medium	
Boyle	7	0.0	0.0	91	2	Tokul Creek	High			Forest production District	High	may drain to Klaus Lake.
Bridges	7	0.0	0.0	92	2	Tokul Creek	High			Forest production District	High	Drains to Boyle lake.
Calligan	7	0.0	0.9	88	2	NFSQ007	High			Forest production District	High	several components of CAO basin rating not covered in eastern King County
Caroline	7	0.0	0.1	88	2	MFSQ017	High			Federal land	High	several components of CAO basin rating not covered in eastern King County
Chester Morse - Masonry Pool	8	0.0	0.5	90	28	Upper Cedar River	High			DWS watershed, City of Seattle	High	Water of statewide significance.
Chetwoot	7	0.0	0.0	98	6	Skykomish	High			Federal land	High	Drains to Lake Angeline.

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Clarice	7	0.0	2.5	81	2	Skykomish	High			Federal land	High	
Copper	7	0.0	0.1	89	5	Skykomish	High			Federal land	High	
Cottage	8	14.4	4.6	72	4	Bear Creek	High	eutrophic	1995-2006	mixed private, public	Medium	Catchment assessment covers only the King County portion of the watershed, which is 1591 acres out of a total of 4275. Phosphorus reduction project currently funded by Washington State Dept of Ecology grant.
Cougar Lake	7	0.0	0.0	98	4	NFSQ014	High			Federal land	High	
Deception Lakes	7	0.0	0.4			Skykomish	High			Federal land	High	
Deep	9	1.7	4.2	92	2	DEEP	Medium	borderline mesotrophic	1988-1994	Washington State	High	
Deer	7	0.0	0.0	98	2	MFSQ016	High			Federal land	High	Drains to Snoqualmie lake
Delta	7	0.0	0.1	88	5	Skykomish	High			Federal land	High	
Derrick	7	0.0	0.5	89	4	MFSQ017	High			Federal land	High	several components of CAO basin rating not covered in eastern King County
Desire	8	11.1	3.5	81	4	Peterson Creek	High	eutrophic	1985-2004	inside UGL, mixed	Medium	
Dolloff	9	48.2	0.0	63	1	MICR	Low	eutrophic	1985-2001	inside UGL, mixed	Low	
Dorothy	7	0.0	0.4	92	4	Skykomish	High			Federal land	High	
Dream	7	0.0	0.3	95	2	MFSQ016	High			Federal land	High	

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Eagle	9	0.0	0.0			Upper Green	High			Tacoma Public Utilities	High	Land around lake owned by Tacoma Public Utilities; most of watershed owned by Washington DNR. Drains to Howard Hansen Reservoir.
Echo	7	6.6	1.4	87	2	Raging River	high	borderline mesotrophic	2004-2005	private	High	
Edds	7	0.0	0.3	92	2	MFSQ024	High			Federal land	High	several components of CAO basin rating not covered in eastern King County
Findley	8	0.0	0.7			Upper Cedar River	High			DWS watershed, City of Seattle	High	Drains to Chester Morse reservoir.
Fisher	7	0.0	0.1	91	2	Skykomish	High			Federal land	High	
Fivemile	9	22.1	1.4	66	2	White River - Pacific	Low	borderline eutrophic	1985-2006	inside UGL, mixed	Low	Large adjacent wetland area.
Francis	7	0.0	0.0	90	2	Skykomish	High			Federal land	High	
Geneva	9	29.3	0.0	64	1	MICR	Low	borderline mesotrophic	1985-2006	Inside UGL, mixed	Low	
Glacier	7	0.0	0.4	86	4	Skykomish	High			Federal land	High	Drains to Surprise Lake.
Goat	7	0.0	0.0	92	1	MFSQ020	High			Federal land	High	Drains to Horseshoe Lake.
Gold	7	0.0	0.3	98	3	Skykomish	High			Federal land	High	Drains to Dorothy Lake.
Hancock	7	0.0	0.6	92	4	NFSQ006	High			Forest production District	High	
Hester	7	0.0	0.5	89	3	MFSQ020	High			Federal land	High	
Holm (Neilson)	9	4.9	38.7	67	2	MGRR002	High	mesotrophic	1997-2006	mixed	Medium	Large adjacent wetland on shoreline.
Horseshoe	7	0.0	0.2	96	2	MFSQ020	High			Federal land	High	

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Howard Hansen Reservoir	9	0.0	1.8	89	37	Upper Green	High			Tacoma Public Utilities	High	
Iceberg	7	0.0	0.0	98	2	MFSQ024	High			Federal land	High	several components of CAO basin rating not covered in eastern King County
Ilswoot	7	0.0	0.0	92	2	Skykomish	High			Federal land	High	
Jade	7	0.0	0.0	95	5	Skykomish	High			Federal land	High	
Joy	7	3.1	6.1	80	3	Harris Creek	High	borderline mesotrophic	2000-2006	mixed private, public	High	
Kaleetan	7	0.0	0.6	99	2	MFSQ011	High			Federal land	High	
Kathleen	8	12.9	5.3	70	2	May Creek	High	mesotrophic	1996-2006	private	Medium	
Keevie	9	6.0	1.6	84	1	MGRR010	High			private	High	
Killarney	10	30.3	0.0	73	2	Hylebos Creek	Low	borderline eutrophic	1985-2006	inside UGL, mixed	Low	
Klaus	7	0.0	0.0	90	2	Tokul Creek	High			Forest production District	High	
Kulla Kulla	7	0.0	1.3	92	3	MFSQ011	High			Federal land	High	
Langlois	7	0.5	0.3	91	2	LTLT001	High	oligotrophic	2002-2006	mixed private, public	High	Much of the shoreline protected by purchase of development rights for the Girl Scouts of America property.
Little Heart	7	0.0	0.1	96	4	Skykomish	High			Federal land	High	Drains to Copper Lake
Loch Katrine	7	0.0	0.1	93	2	NFSQ012	High			Federal land	High	
Locket	7	0.0	0.3	93	5	Skykomish	High			Federal land	High	
Loop	7	1.3	3.1	90	1	Multiple: 3 basins	High			Forest production District	High	3 CAO basins intersect at the lake: LTLT008, LTLT006, LTLT005
Lynch	7	0.0	11.8	90	3	South Fork Tolt River	High			Forest production District	Medium	

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Malachite	7	0.0	0.1	92	4	Skykomish	High			Federal land	High	
Marcel	7	5.9	23.4	78	4	Harris Creek	High	borderline eutrophic	2000-2006	private	Medium	
Margaret	7	2.7	4.4	78	3	Cherry Creek	High	borderline mesotrophic	2000-2006	DWS reservoir, private	High	Managed as domestic water supply for area residents; catchment assessment covers only the King County portion of the watershed, which is 292 acres out of a total of 1836.
Marmot	7	0.0	0.8	84	2	Skykomish	High			Federal land	High	
Marten	7	0.0	1.3	88	3	MFSQ016	High			Federal land	High	
Mason	7	0.0	0.0	89	3	MFSQ011	High			Federal land	High	
McDonald	8	13.2	6.0	82	2	Issaquah Creek	High	mesotrophic	1996-2006	private	Medium	Reduction in trophic state in recent years.
Moneysmith	9	5.2	34.9	86	3	MGRR003	High			private	Medium	Large amount of adjacent wetland.
Moolock	7	0.0	0.9	89	1	NFSQ006	High			Washington State	High	Drains to Hancock Lake
Morton	9	15.2	9.1	60	2	Soos Creek	Medium	borderline mesotrophic	1985-2006	mixed private, public	Medium	
Nadeau	7	0.0	1.2	82	1	NFSQ006	High			Washington State	High	Drains to Hancock Lake
Nordrum	7	0.0	0.0	97	2	MFSQ016	High			Federal land	High	
Otter	7	0.0	0.2	93	5	Skykomish	High			Federal land	High	Drains to delta lake
Panther	9	42.6	0.0	71	4	BLCK	Low	eutrophic	1985-2000	mixed	Low	
Paradise (middle)	7	0.0	0.1	98	3	NFSQ013	High			Federal land	High	
Philippa	7	0.0	0.3	92	2	NFSQ012	High			Federal Land	High	
Pratt	7	0.0	1.0	93	3	MFSQ011	High			Federal land	High	

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Ptarmigan - lower	7	0.0	2.5	87	3	Skykomish	High			Federal land	High	
Rattlesnake	8	1.4	0.2	87	2	Upper Cedar River	High			City Of Seattle	High	
Ravensdale	9	2.7	0.3			Soos Creek	Medium	borderline mesotrophic	1996-2003	private	High	
Retreat	8	5.3	4.1	70	1	Rock Creek	High	oligotrophic	1996-2006	private	High	
Rock	7	0.0	0.1	98	5	Skykomish	High			Federal land	High	
S.M.C.	7	0.0	0.5	97	1	NFSQ005	High			State owned	High	
Sammamish- N KC shoreline	8			69	1	multiple basins	Low	borderline mesotrophic	1985-2006	mixed private, public	Low	Two basins in KC jurisdiction, both rated Low by CAO basin standards. Water of statewide significance.
Sammamish- S KC shoreline	8			80	1	multiple basins	High	borderline mesotrophic	1985-2007	mixed private, public	Low	One small slice of low CAO-rated property along eastern edge of KC jurisdiction. Most is within state park. Water of statewide significance.
Shadow	9	11.6	10.4	72	1	Soos Creek	Medium	mesotrophic	1985-2006	mixed private, public	Medium	Jenkins Creek
Shady (Mud)	8	22.9	2.8	71	1	Peterson Creek	High	borderline mesotrophic	1985-2004	inside UGL, mixed	Low	
Snoqualmie		18.2	8.1	91	5	MFSQ016	High			Federal land	High	
Snoqualmie Mill Pond		0.0	0.4			SNOR046	Medium				High	
Snow		0.0	0.0	989	4	MFSQ016	High			Federal land	High	several components of CAO basin rating not covered in eastern King County
Spring (Otter)	8	5.6	1.7	83	2	Peterson Creek	High	mesotrophic	1985-2006	mixed private, public	High	

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Star	9	57.5	0.0	53	1	LGRW004	Low	oligotrophic	1985-2006	inside UGL, mixed	Low	Lake water quality has been shown to be very good despite basin condition.
Sunday	7	0.0	0.4	98	4	NFSQ012	High			Federal land	High	
Surprise	7	0.0	0.3	89	5	Skykomish	High			Federal land	High	
Thompson	7	0.0	0.3	96	2	MFSQ011	High			Federal land	High	part of Watershed outside Federal boundary, owned by Wash-state
Tolt reservoir	7	0.0	0.2	83	13	South Fork Tolt River	High			DWS watershed, City of Seattle	High	Water of statewide significance.
Tuscohatchie - Lower	7	0.0	0.3	97	3	MFSQ011	High			Federal land	High	
Tuscohatchie - upper	7	0.0	0.1	93	12	MFSQ011	High			State owned	High	Drains to lower Tuscohatchie.
Twelve	8	9.9	0.5	87	2	Rock Creek	High	mesotrophic	1985-2004	inside UGL, mixed	Medium	Large wetland along eastern shoreline
Upper Loch Katrine	7	0.0	0.0	97	2	NFSQ012	High			Federal land	High	
Upper Wildcat	7	0.0	0.9	91	3	MFSQ021	High			Federal land	High	several components of CAO basin rating not covered in eastern King County.
Walsh	8	0.1	0.7	89	1	Walsh Lake	High	borderline mesotrophic	2002-2003	DWS watershed, City of Seattle	High	Small portion of the catchment is outside the Cedar River Watershed.
Washington - NE KC shoreline	8			52	1	Multiple basins	Low	borderline mesotrophic	1963-2006	mixed private, public	Low	7 basins on NE shoreline in KC jurisdiction. All are in the low range. Water of statewide significance.

Lake	WRIA	Catchment % urbanized	Catchment % agriculture or logged	Shoreline alterations score	Number of reaches	CAO Basin name	CAO basin condition	Trophic state	Span of years measured	Ownership or management of shoreline	Catchment Context Rating	Remarks
Washington - SW KC shoreline	9			32	1	Multiple basins	Low	borderline mesotrophic	1963-2007	mixed private, public	Low	3 basins on the SW shoreline in KC jurisdiction. All in the low range for CAO rating. Water of statewide significance.
Youngs Reservoir	8			69	1	Multiple basins	High			DWS reservoir, City of Seattle	High	2 CAO basins meet: Peterson Creek, Soos Creek, but most of the water in the lake comes from the Cedar River.

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-12-1	Vashon	5,512	Trees are present along most of the shoreline, however they are generally not overhanging and are frequently separated from the shoreline edge by houses.	Slightly over half the drift cell was characterized as having a medium level of imperviousness.	KI-12-1 originates at a divergent zone located 1630 ft (0.3 miles) west of the Ferry terminal on Vashon Island and extends 1.0 mile to its terminus at the tip of Dolphin Point. Bulkheads are prolific, covering 71.9% of the drift cell. Feeder Bluffs were mapped along 25.4% of the KI-12-1 shoreline. Results of historic analysis indicated that prior to development sediment sources comprised 97.3% of this drift cell. When compared with current conditions this equates to a loss of 74% (3965 ft) of the available sediment sources in the cell.	73.90%	71.90%	Continuous or dense eelgrass is located in the western three-fourths of this drift cell. There are no known forage fish spawning known within this drift cell.	The main ferry terminal is located in the center of the drift cell.	Medium		High	Medium	KI-11-1 (Low) & KI-12-2 (Medium)
KI-12-2	Vashon	5,581	Trees are present along approximately 80% of the shoreline, however they are generally not overhanging the shoreline.	Slightly over two-thirds of the drift cell was characterized as having a medium level of imperviousness	Drift cell KI-12-2 experiences northward drift and terminates at Dolphin Point. It originates at a broad zone of drift divergence off a minor headland of the coast 0.8 to 1.1 miles south of Dolphin Point. Shoreline modifications were observed on 42.9% of the drift cell. Feeder Bluffs occur over much of the central and southern unmodified shoreline, covering 19.9% of the drift cell. Accretion Shoreforms were exclusively located within close vicinity to the drift cell terminus at Dolphin Point. Accretion Shoreforms represent 28.3% of the cell. Results of historic analysis indicated that prior to shoreline modifications sediment sources made up 61.4% of the KI-12-2 shore. When compared with current conditions, this accounts to a 68% loss of sediment sources. Historic Accretion Shoreform mapping indicated that there has been no loss of Accretion Shoreforms in KI-12-2.	67.60%	42.90%	Surf smelt spawning has been documented along the northern half of this drift cell. This drift cell has mostly patchy eelgrass beds throughout the cell, with a single dense or continuous bed in the middle of the cell.		Medium		High	Medium	KI-12-1 (Medium) & KI-12-3 (Medium)
KI-12-3	Vashon	11,586	Patchy trees are present along approximately 60% of the shoreline. Furthermore, 60% of those trees continuously overhang the shoreline.	Slightly over half the drift cell was characterized as having medium level of imperviousness.	Net shore-drift shifts to southward transport in KI-12-3, which extends from the divergent zone located at the southern end of KI-12-2 to the tip of Point Beals. The cell measures 2.2 miles, roughly half of which is modified (50.4%). Sediment sources are predominantly found near the northern origin of the drift cell. Field mapping identified 36.6% of the KI-12-3 shoreline as Feeder Bluffs. Accretion Shoreforms typically occurred in the southern half and near the drift cell terminus at Point Beal. These beaches represent 12.3% of the cell. Results of historic conditions analysis indicated that all sediment sources in KI-12-3 are currently intact, resulting in a zero% loss of sediment sources. However, 38% of modified segments scored as Potential Feeder Bluff, such that these bluffs may have actually been historic sediment sources, just likely contributing smaller quantities at a lower frequency than Feeder Bluffs. Historic Accretion Shoreform mapping indicated that 16% of the KI-12-3 shore was accretion shoreforms prior to development. When compared to current conditions mapping, it appears that KI-12-4 has undergone a minimum of 24% loss of Accretion Shoreforms since pre-development conditions.	0.00%	50.40%	Surf smelt spawning occurs at the convergence of this drift cell with KI-12-4. A small segment of shoreline (1300ft) in the middle of this drift cell has patchy bullwhip kelp. The southern half of this drift cell has dense eelgrass beds, while the northern half has patchy or no eelgrass beds present.	Point Beals is at the convergent zone.	Medium			Medium	KI-12-2 (Medium) & KI-12-4 (Medium)
KI-12-4	Vashon	7,558	Continuous overhanging trees are present for about 45% of the drift cell, while another 40% of the drift cell includes trees not overhanging the shoreline	Approximately 80% of the drift cell was characterized as having a low level of imperviousness.	This drift cell with northward net shore-drift originates at the minor headland near Vashon Landing, and ends at Point Beals. Modifications are found on 35.4% of the KI-12-4 shoreline. Field mapping identified Feeder Bluffs along 47% of the KI-12-4 shoreline. Accretion Shoreforms were mapped along 16.2% of the cell, with the cusped foreland at Point Beals being the largest Accretion Shoreform. Prior to development 71.5% of the KI-12-4 shoreline was composed of sediment sources. When compared with current conditions this equates to a 34.3% loss of sediment sources in the drift cell. Results of historic Accretion Shoreform mapping indicated that prior to development 22% of the KI-12-4 shore was accretionary in nature. When these results are compared with current conditions mapping, this equates to a 25% loss of Accretion Shoreform length in KI-12-4	34.30%	35.40%	Surf smelt spawning occurs at the convergence of this drift cell with KI-12-3. Patchy eelgrass beds are found throughout this drift cell with a small dense bed located in the middle of the cell.	The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of sediment sources that have been lost in this drift cell.	High			Medium	KI-12-3 (Medium) & KI-13-2 (High)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-2	Vashon	11,648	Continuous overhanging trees are present for about 64% of the drift cell, while another 10% of the drift cell has trees not overhanging the shoreline. More unusual is that almost 20% of the drift cell has marsh vegetation present as part of KVI or Point Heyer.	Approximately 80% of the drift cell was characterized as having a low level of imperviousness.	Originating at the southern shore of Vashon Landing, this drift cell exhibits southward drift and terminates along the west side of the large recurved spit near the marsh inlet at Point Heyer. It measures 2.5 miles in length and is characterized by minimal modifications (<10%) and eroding bluffs. Feeder Bluffs accounted for 53.6% of the shoreline. Accretion Shoreforms were mapped at two locations in the drift cell, Klahanie Beach and Point Heyer. Together these beaches make up 23% of the KI-13-2 shoreline. Prior to development, 56.6% of KI-13-2 was comprised of sediment sources. Results of historic conditions analysis indicated that 57% of the cell was Feeder Bluff, while another 8% were Potential Feeder Bluff. When compared to current conditions, this equates to a minimum of a 5.4% loss of sediment sources in the drift cell.	5.40%	11.20%	Surf smelt spawning occurs in the northern two-thirds of the drift cell. Dense eelgrass beds occur in the northern two-thirds of this drift cell, while the southern third has either patchy eelgrass beds or none at all. There is one known bald eagle nest along the shoreline of this drift cell.	Point Heyer is a relatively large salt marsh complex that includes a variety of micro-habitats in relatively healthy state. A tidal inlet channel is present at the drift cell terminus.	High	High		High	KI-12-4 (Medium) & KI-13-3 (low)
KI-13-3	Vashon	843	Approximately 75% of the drift cell's riparian vegetation is made up of landscaping grass. The other 35% is composed of trees which are separated from the shoreline by houses.	All of the drift cell was characterized as having a medium level of imperviousness.	This relatively short drift cell encompasses less than 0.2 miles (843 ft) of shoreline and exhibits northeastward drift. It originates just southwest of Point Heyer and terminates at the Point Heyer tidal inlet. It is characterized by dense residential development and is completely modified. Prior to the construction of shoreline modifications, 100% of this short drift cell was Feeder Bluff. When compared with current conditions mapping, this equates to a 100% loss of sediment sources in the KI-13-3.	100.00%	100.00%	This drift cell has a fairly equal mix of patchy and dense eelgrass beds. There are no known forage fish spawning beaches.		Low			Low	KI-13-2 (High) & KI-13-4 (Low)
KI-13-4	Vashon	1,485	Approximately 50% of the drift cell's riparian vegetation is made up of landscaping grass. The other 50% is composed of trees which are separated from the shoreline by houses.	All of the drift cell was characterized as having a medium level of imperviousness.	This drift cell originates at a zone of divergence at the southwestern end of KI-13-3. Southwestward transport predominates to the cell terminus at a bayhead beach on the northwest shore of Tramp Harbor. KI-13-4 measures 0.3 miles (1,485 ft) and consists of mostly modified Accretion Shoreforms and modified shoreline. Results of historic analysis indicated that 31.8% of drift cell KI-13-4 was a source of nearshore sediment or Feeder Bluff prior to shoreline modifications. When compared with current conditions this equates to a 100% loss of sediment sources in the drift cell, likely impacting down-drift Accretion Shoreforms. Historic accretion shoreform mapping indicated that prior to development Accretion shoreforms represented 68% of the KI-13-4 shore. When these results are compared with current conditions mapping, this represents at least a 9% loss of accretion shoreforms in KI-13-4.	100.00%	38.00%	This drift cell has a fairly equal mix of patchy and dense eelgrass beds. There are no known forage fish spawning beaches.		Low			Low	KI-13-3 (Low) & KI-13-5 (Low)
KI-13-5	Vashon	2,166	Approximately 85% of the drift cell's riparian vegetation is made up of trees separated from the shoreline by Docketon Road. The other 15% is composed of landscaped grass.	Approximately 60% of the drift cell was characterized as having a medium level of imperviousness, while the other 40% was characterized as low.	KI-13-5 originates at a zone of divergence just north of Portage and exhibits northwestward transport into the bayhead beach in Tramp Harbor. The cell shore is heavily modified by Docketon Road SW, which connects Maury and Vashon Islands and runs along and on top of the beach. Like KI-13-4 this drift cell is exclusively composed of modified shoreline and Accretion Shoreforms. Modifications make up 96.4% of the drift cell.	100.00%	96.40%	This drift cell's aquatic vegetation is composed of mostly patchy eelgrass. There are no known forage fish spawning beaches.	There is a public fishing pier located off of Docketon Road. The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of sediment sources that have been lost in this drift cell.	Medium			Low	KI-13-4 (Low) & KI-13-6 (High)
KI-13-6	Vashon & Maury	19,757	Approximately 72% of the drift cell's riparian vegetation is made up of trees adjacent to the shoreline, with 30% of it overhanging the shoreline. Another 18% is composed of landscaped grasses.	Approximately 60% of the drift cell was characterized as having a low level of imperviousness, while the other 40% was characterized as having a medium level of imperviousness.	Originating at the bluff north of Portage, this drift cell exhibits eastward transport along the entire north shore of Maury Island and terminates at Point Robinson. Measuring 3.7 miles, this drift cell is characterized by small residential developments between actively eroding bluffs. Twenty-three percent of the KI-13-6 shoreline is modified. Sediment sources were most frequently observed in the central portion of the cell, where bluffs are exposed to considerable fetch from the north. Feeder Bluffs made up 36.4% of the drift cell. Feeder Bluff Exceptional was mapped in two different regions, representing 5.8% of the drift cell. Accretion Shoreforms represent 28.6% of the drift cell and were most frequently observed in the east half of the cell. Results of historic analysis indicated that prior to modifications 60% of KI-13-6 were sediment sources. When compared with current conditions this equates to at least a 29% loss of sediment sources in this drift cell. Historic Accretion Shoreform mapping reveals a net increase in the length of accretion shoreforms in this drift cell since pre-development conditions. The most likely reason for this is the lack of detailed historic resources.	29.00%	23.00%	One surf smelt spawning beach occurs near the end of the drift cell. This drift cell's aquatic vegetations composed of mostly patchy eelgrass. There is one known bald eagle nest along the shoreline of this drift cell.	Point Robinson and its light house is located at the very end of this drift cell.	High	High		High	KI-13-5 (low) & KI-14-2 (High)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-14-2	Maury	29,721	Approximately 24% of the drift cell's riparian vegetation is made up of landscaped grass. Another 30% is composed of shrubs. The remaining 45% is composed of trees, with 27% overhanging the shorelines.	Approximately 65% of the drift cell was characterized as having a low level of imperviousness, while another 33% was characterized as having a medium level of imperviousness. This drift cell also has two of the denser housing developments (Gold Beach & Sandy Shores) along the marine shorelines of both islands.	KI-14-2 extends 5.6 miles along the entire southeastern shore of Maury Island. Modified shorelines were mapped along 20.1% of the KI-14-2 shoreline, and were most frequently observed in the southern portion of the drift cell. Currently, 54% of the drift cell shoreline is actively contributing sediment to the nearshore. Feeder Bluff Exceptional units were mapped along 15.8% of the shoreline. Feeder Bluffs encompassed 28.4% of the drift cell. Accretion Shoreforms were mapped along 27.3% of the cell. KI-14-2 was historically comprised of 50.6% sediment sources. Results of the historic analysis indicated that prior to modifications 17% of the cell was Exceptional Feeder Bluff, while 34% were Feeder Bluffs. Another 8% of the shore scored as Potential Feeder Bluffs. When compared with current conditions, this equates to a 12.7% loss of sediment sources in the cell KI-14-2. Historic Accretion Shoreform mapping of SE Maury Island indicated that prior to modifications of the KI-14-2 nearshore 4% of the cell was historically accretionary in nature. When these results are compared with current conditions mapping, it becomes apparent that a net increase in AS has occurred in this cell. As previously mentioned, Maury Island's southeast shoreline is unique in that four large artificial beaches have been created by aggregate mining. These beaches are similar in character to natural Accretion Shoreforms; however, sediment was not derived from wave energy and these beaches are not in naturally accreting areas. Therefore, the likelihood of long-term maintenance of these features without armoring is small because natural landscape processes do not support their existence.	12.70%	20.10%	Herring spawning occurs along the western half of the drift cell, ending its eastern extent in front of the Glacier gravel mine site. There is one known sand lance spawning beach at the eastern edge of the drift cell. There are two known surf smelt spawning beaches known in this drift cell. Interestingly, the most western surf smelt spawning beach is the only known beach in King County where all three species of forage fish spawn. This drift cell's aquatic vegetation is composed of mostly patchy eelgrass. There are two major stands of madrone forest along the shoreline of this drift cell.	Gravel mining is a historic use of the shoreline through this drift cell. It is the only drift cell on Vashon-Maury where zoning conditions still allow mining along the shoreline. The area zoned mining is almost a mile long.	High	high		High	KI-13-6 (High) & KI-13-8 (Medium)
KI-13-8	Maury	17,489	Approximately 47% of the drift cell's riparian vegetation is made up of trees adjacent to the shoreline, with 25% of it overhanging the shoreline. Another 36% is composed of landscaped grasses. The final 17% is composed of trees that are separated from the shoreline by houses.	Approximately 85% of the drift cell was characterized as having a medium level of imperviousness, while the other 15% was characterized as having a low level of imperviousness.	This cell exhibits northward net shore-drift from east of Rosehilla into Quartermaster Harbor. Predominant and prevailing southerly waves enter Quartermaster Harbor, causing northward net shore-drift up to Dockton. Waves refract around the Dockton headland, evident by an eastern recurved spit at the point. Because of the wave shadow effect caused by the headland near Dockton, substantial sediment is deposited in the intertidal and low tide terrace at the point and does not get transported further into the bay due to the relative low energy in the bay. This drift cell measures 3.4 miles, 46% of which had been modified. High elevation bluffs with little residential development that slowly grades to lower bank shores with more dense development characterize this shore segment. Feeder Bluff was mapped along 27.8 % of the KI-13-8 shoreline. Sediment sources were predominantly observed in the southern half of the drift cell, which is to be expected given the greater exposure of these beaches to the south. Accretion Shoreforms encompassed 21.6% of the KI-13-8 shoreline. Results of historic conditions analysis indicated that prior to development, 56.4% of this drift cell was comprised of sediment sources. When compared with current conditions, this results in at least a 50.6% loss of sediment sources. Historic Accretion Shoreform mapping indicated that 24% of the KI-13-8 shore was Accretion Shoreform prior to anthropogenic alteration of the nearshore. When compared with current conditions, these results reveal a 12% loss of Accretion Shoreforms in the drift cell.	50.60%	46.00%	Herring spawning occurs throughout this drift cell. This drift cell's aquatic vegetation is composed of mostly patchy eelgrass.	Shores within Quartermaster Harbor are generally high bank along the more exposed southern reaches of the Harbor, and gradually reduce in grade to lower bank shores in the northern harbor, where exposure is least. Several streams flow into Quartermaster Harbor, creating valuable estuarine habitat for native flora and fauna. Shoreline development varies in density, but is greatest in the northern portion of the harbor. The Quartermaster Harbor sub-area consists of 13 drift cells and one region of negligible drift (KI-13-10/13-11-NAD) or the interior shore of Raab's Lagoon. Historic mapping of Feeder Bluffs in the protected shores of inner Quartermaster Harbor, resulted in some cells without mapped feeder bluffs. This is a direct result of the approach for the historic reconstruction and the data used to score modified units. This does not mean the low banks within the developed portion of the harbor did not contribute sediment historically before they were armored.	Medium		high	Medium	KI-14-2 (High) & KI-13-9 (High)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-9	Maury	2,254	Approximately 71% of the drift cell's riparian vegetation is made up of trees adjacent to the shoreline, with 63% of it overhanging the shoreline. Another 17% is composed of landscaped grasses. The final 12% is composed of trees separated from the shoreline by houses.	Approximately 50% of the drift cell was characterized as having a low level of imperviousness, while the other 50% was characterized as having a medium level of imperviousness.	Drift cell 13-9 is in a wave shadow from the local prevailing and predominant southerly waves, resulting in southward net shore-drift. The cell measures 0.5 mile and terminates at the bayhead beach in Dockton Park. Low energy, a muddy foreshore, and (deciduous) forested upland characterize this drift cell. Modifications were found along 26.1% of the drift cell. Sediment sources were mapped along 51.9% of the KI-13-9 shoreline. Feeder Bluffs were typically located in the northern portion of the cell. Accretion Shoreforms made up 22.0% of the shoreline. Results of historic conditions analysis indicated that all sediment sources in KI-13-9 are currently intact, resulting in no loss of sediment sources. However, several modified units, cumulatively representing over 17% of the drift cell were Potential Feeder Bluffs, which likely delivered small quantities of sediment to the nearshore systems. Historic Accretion Shoreform mapping indicated that 31% of the KI-13-9 shore was accretionary in nature prior to nearshore development. When comparing these results to those of current conditions mapping, this equates to a 29% loss of Accretion Shoreform in this drift cell.	0.00%	26.10%	Herring spawning occurs throughout this drift cell. Surf smelt are known to spawn in the southern half of this drift cell. The aquatic vegetation of this drift cell is composed of mostly dense eelgrass beds or none at all.	Dockton Park boat ramp is located at the terminus of the drift cell.	High			High	KI-13-8 (Medium) & KI-13-10 (High)
KI-13-10	Maury	8,625	All of the drift cell's riparian vegetation is made up of trees adjacent to the shoreline, with 75% of it overhanging the shoreline.	Approximately 64% of the drift cell was characterized as having a low level of imperviousness, while the other 35% was characterized as having a medium level of imperviousness.	Northward net shore-drift resumes in drift cell KI-13-10, which extends north from KI-13-9 to the mouth of Rabb's Lagoon. It measures 1.6 miles, 20.2% of which is modified and no longer functioning under natural geomorphic conditions (Table 8, Map 7). Wide intertidal beaches and abundant sediment sources characterize most of this drift cell. Feeder Bluffs were mapped along 57% of the KI-13-10 shoreline. Accretion Shoreforms represent 8.5% of the KI-13-10 shoreline. Results of historic conditions analysis indicated that all confirmed sediment sources in KI-13-10 are currently intact. Historic Accretion Shoreform mapping in this drift cell indicated that 15% of the KI-13-10 was accretionary in nature. Comparison of these results with current conditions results, indicate that 44% of the historic length of Accretion Shoreform in KI-13-10 has been lost.	0.00%	20.20%	Herring spawning occurs throughout this drift cell. There are two known surf smelt spawning beaches in the northern half of this drift cell. The aquatic vegetation of this drift cell is composed of mostly dense eelgrass beds or none at all. There is one known bald eagle nesting site along the shoreline of this drift cell.	Note that sediment sources for the whole drift cell are intact and there are trees along the most of the shoreline.	High	High		High	KI-13-9 (High) & KI-13-10/13-11-NAD (Medium)
KI-13-10/13-11-NAD	Maury	3,122	Approximately 43% of the drift cell's riparian vegetation is made up of landscaped grass. The other 57% is composed of trees, with 28% overhanging the shoreline.	Approximately 90% of the drift cell was characterized as having a low level of imperviousness, while the other 10% was characterized as having a medium level of imperviousness.	This reach represents the shore within protected Raab's Lagoon. Negligible drift takes place within the lagoon, which has a flood-tide delta and rockery that restricts tidal flow. The historic T-sheet (Figure 33) shows the original relatively wide lagoon opening prior to development. Historic Accretion Shoreform mapping identified this area as exclusively accretionary in nature and a drowned channel lagoon with a barrier spit on the southwestern shore (which falls within cell KI-13-11).	0.00%	100.00%	Herring spawning occurs throughout this drift cell. There is no known eelgrass within this drift cell, but given its altered lake like condition, lack of eelgrass is not unexpected.	Restoring normal tidal flow in and out of Raabs lagoon is a priority restoration project in the WRIA 9 salmon conservation plan. The drift cell ranking is lower for basin context score than the CAO score because of newer information that shows that the entire shoreline is armored.	High			Medium	KI-13-10 (Medium) & KI-13-11 (High)
KI-13-11	Maury	587	All of this short drift cell is characterized by landscaped grass	All of the drift cell was characterized as having a low level of imperviousness.	Drift cell KI-13-11 exhibits eastward net shore-drift and terminates at the entrance to Rabb's Lagoon. This short drift cell measures only 0.1 mile (587 ft), 31.4% of which is modified and no longer able to contribute sediment to the nearshore. Sediment sources were mapped by CGS along 68.6% of the KI-13-11 shore. No Accretion Shoreforms or transport zones were observed in this drift cell. Results of historic conditions analysis indicated that all sediment sources in KI-13-11 are currently intact, resulting in no loss of sediment sources. Historic Accretion Shoreform mapping indicated that 44% of this drift cell was once accretionary in nature, all of which was encompassed within the drowned channel lagoon, or Raab's Lagoon. Because this feature has been considerably modified (several times over) and does not currently function as an Accretion Shoreform, a 100% loss of accretion shoreforms has occurred in this drift cell.	0.00%	31.40%	Herring spawning occurs throughout this drift cell. There is very little eelgrass found in this drift cell.		High			High	KI-13-10/13-11-NAD (Medium) & KI-13-12 (Medium)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-12	Maury	5,436	Approximately 70% of the drift cell's riparian vegetation is made up of landscaped grass. Another 18% is composed of trees separated from the shoreline by houses. The remaining 12% is composed of trees adjacent to the shoreline.	All of the drift cell was characterized as having a medium level of imperviousness.	Cell KI-13-12 extends 1.0 mile from the divergence zone west of KI-13-11, north to the bayhead beach near Portage. This drift cell is characterized by northward drift across low bank, moderately dense residential development. Modified shores make up 73.6% of the drift cell. Feeder Bluffs represent 15.8% of KI-13-12. A single Accretion Shoreform was mapped at the drift cell terminus near Portage. This beach is composed of sand with moderate pebble and is modified down to mean high water. It represents 8.8% of the KI-13-12 shoreline. Prior to development, 30% of the in KI-13-12 shore was comprised of Feeder Bluffs. When compared with current conditions mapping, this equates to a 47.6% loss of sediment sources in this drift cell. Results of historic Accretion Shoreform mapping indicated that 8% of the KI-13-12 shore was accretionary prior to development, all of which was encompassed within a longshore lagoon at Portage. A slight, 1% (59 ft) discrepancy between historic and current conditions exists in this drift cell, which is likely due to an accuracy issue with the historic resources.	47.60%	73.60%	Herring spawning occurs throughout this drift cell. Surf smelt are known to spawn in almost the entire drift cell. This drift cell's aquatic vegetation is composed of mostly patchy eelgrass.		Medium		High	Medium	KI-13-11 (High) & KI-13-13 (Low)
KI-13-13	Vashon	2,677	Approximately 60% of the drift cell's riparian vegetation is made up of landscaped grass. Another 32% is composed of trees separated from the shoreline by houses. The remaining 8% is composed of trees adjacent to the shoreline.	All of the drift cell was characterized as having a medium level of imperviousness.	Northeastward net shore-drift transports sediment from the headland at Quartermaster into the bayhead beach near Portage. During very recent geologic time this depositional pattern has built the low isthmus that connects Vashon and Maury Islands (Schwartz et al. 1991). This drift cell measures 0.6 miles, 52.5% of which is modified and no longer contributes sediment to the nearshore. Sediment sources are completely absent from this drift cell, which is now exclusively composed of modifications, Accretion Shoreforms and transport zones. Accretion Shoreforms comprise 40.4% of the KI-13-13 shoreline. Historic conditions analysis indicated that no considerable sediment sources in KI-13-13 were present in the drift cell. However 38% of the drift cell was a Potential Feeder Bluff, which likely delivered some quantity of sediment to the nearshore. Historic Accretion Shoreform mapping indicated that 43% of the KI-13-13 shore was accretionary in nature prior to modification. Comparison of these results with those from current conditions mapping equates to a 5% loss of AS in this drift cell.	0.00%	52.50%	Herring spawning occurs throughout this drift cell. Surf smelt spawn in the eastern two-thirds of this drift cell. Similarly, the eastern two-thirds contain dense eelgrass, while the other third does not have any eelgrass. There are two known bald eagle nest sites along the shoreline of this drift cell.	The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of shoreline armoring, loss of potential sediment sources and, the generally poor condition of the riparian area.	High			Low	KI-13-12 (High) & KI-13-14 (Low)
KI-13-14	Vashon	1,529	Approximately 90% of the drift cell's riparian vegetation is made up of landscaped grass. Another 10% is composed of trees separated from the shoreline by houses.	All of the drift cell was characterized as having a medium level of imperviousness.	KI-13-14 exhibits northwestward net shore-drift from the headland at Quartermaster to the drift cell terminus at Tsugwalla's Creek stream mouth. This cell measures 0.2 miles (1,023 ft) and is completely modified. Results of historic conditions analysis indicated that no considerable sediment sources were present in KI-13-14. However 67% of the drift cell was a Potential Feeder Bluff, which likely delivered some sediment to the nearshore infrequently. Historic Accretion Shoreform mapping in KI-13-14 indicated that 15% of the cell was accretionary in nature, all of which was associated with the Tsugwalla's Creek stream mouth at the drift cell terminus. Comparison of these results with those from current conditions mapping equates to a 100% loss of the historic accretion shoreforms in this short drift cell.	0.00%	100.00%	Herring spawning occurs throughout this drift cell. Surf smelt are known to spawn in almost the entire drift cell. There is no known eelgrass beds in this drift cell.	The fish passage barrier at the mouth of Tsugwalla Creek is a priority project within the WRIA 9 Salmon Conservation Plan.	Low			Low	KI-13-13 (Low) & KI-13-15 (Low)
KI-13-15	Vashon	2,903	Approximately 65% of the drift cell's riparian vegetation is made up of landscaped grass. Another 35% is composed of trees separated from the shoreline by houses.	All of the drift cell was characterized as having a medium level of imperviousness.	Northeastward net shore-drift resumes in cell KI-13-15, which terminates in convergence with KI-13-14 at Tsugwalla's Creek's mouth. KI-13-15 measures 0.5 miles and is heavily modified by continuous residential bulkheading. In total 96.8% of the KI-13-14 shoreline is modified. Results of historic conditions analysis indicated that pre-development condition banks did not score as Feeder Bluff, indicating that no significant sediment sources were lost as a result of bulkheading in KI-13-15. However, the limited sediment input from the low bank is now lost. Historic Accretion Shoreform mapping found no discrepancy between historic and current conditions in this drift cell. Another 23% of the KI-13-17 shoreline was classified as Potential Feeder Bluffs. When compared with current conditions mapping, which has no current sediment sources, there has been a complete (100%) loss of sediment sources in the drift cell.	0.00%	96.80%	Herring spawning occurs throughout this drift cell. Surf smelt are known to spawn in almost the entire drift cell. There is no known eelgrass beds in this drift cell.	The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of shoreline armoring, loss of potential sediment sources and, the generally poor condition of the riparian area.	Medium			Low	KI-13-14 (Low) & KI-13-16-NE (High)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-16NE	Vashon	607	All of this short drift cell is characterized by overhanging trees.	All of the drift cell was characterized as having a medium level of imperviousness.	This short cell exhibits northward transport into the Judd Creek estuary. The cell terminates 614 ft upstream, at the limit of marine influence on nearshore sedimentation. Thirteen percent (13.3%) of the cell is modified by residential bulkheading. The adjacent unmodified shoreline is exclusively accretionary in nature (86.7%). Results of historic conditions analysis indicated that, similar to KI-13-15, no quantifiable sediment sources were present in pre-development conditions. Historic Accretion Shoreform mapping indicated that 86% of KI-16-NE was historically accretionary in nature, as part of the Judd Creek estuary or stream mouth. When compared with current conditions mapping, there appeared to be a slight 1% (5 ft) discrepancy between historic and current conditions in this drift cell, likely due to accuracy issues with historic data sets.	0.00%	13.30%	Herring spawning occurs throughout this drift cell. There is no known eelgrass beds in this drift cell.		High			High	KI-13-15 (Low) & KI-13-16-SW (Medium)
KI-13-16-SW	Vashon	901	All of the drift cell's riparian vegetation is made up of trees separated from the shoreline by houses.	All of the drift cell was characterized as having a medium level of imperviousness.	Cell KI-13-16-SW is located along the southwest shore of the Judd Creek estuary. It measures 0.2 miles (901 ft) and exhibits northward drift into the estuary. Fifty-three (53.1%) of the shoreline is modified by residential bulkheads. Prior to development sediment sources comprised 53.1% of the KI-13-16-SW shore. Data comparison indicated that the historic sediment sources in the southern half of the cell (outside the narrow estuary) in KI-13-11 are now bulkheaded, resulting in a 100% loss of sediment sources. Historic Accretion Shoreform mapping found no discrepancy between historic and current conditions in this drift cell.	100.00%	53.10%	Herring spawning occurs throughout this drift cell. There is no known eelgrass beds in this drift cell.		Medium			Medium	KI-13-16-NE (Medium) & KI-13-17 (Low)
KI-13-17	Vashon	3,935	Approximately 50% of the drift cell's riparian vegetation is made up of landscaped grass. Another 32% is composed of trees separated from the shoreline by houses. The remaining 18% is composed of trees adjacent to the shoreline.	All of the drift cell was characterized as having a medium level of imperviousness.	Southward net shore-drift in this cell results from northeasterly fetch. Cell KI-13-17 extends south from the Judd Creek estuary 0.75 miles, and terminates at micro-spit complex southeast of the Burton Marina. A moderate amount of residential development along the bank, muddy, low energy beaches and several docks and marinas characterize this cell. Modified shorelines are found along 85.7% of the cell. No active sediment sources were mapped in the cell. Two transport zones were mapped, accounting for 6.9% of the cell. Four Accretion Shoreforms comprised another 7.4% of the KI-13-17 shoreline. Two of the Accretion Shoreforms were dominated by stream-derived sediment. Results of historic conditions analysis indicated that 28.2% of KI-13-17 was Feeder Bluff prior to residential bulkheading and marina development in the nearshore. Historic Accretion Shoreform mapping indicated that 9% of the KI-13-17 shore was historically accretionary in nature, all of which was encompassed within a longshore lagoon that extends into adjacent cell KI-13-18. Comparison of these results with those from current conditions mapping indicates that 14% of the historic accretion shoreforms in this drift cell have been lost.	100.00%	85.70%	Herring spawning occurs throughout this drift cell. There is no known eelgrass beds in this drift cell.	There are two marinas in this drift cell. The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of shoreline armoring, complete loss of sediment sources and, the generally poor condition of the riparian area.	Medium			Low	KI-13-16-SW (Medium) & KI-13-18 (Medium)
KI-13-18	Vashon	5,084	Approximately 46% of the drift cell's riparian vegetation is made up of landscaped grass. Another 37% is composed of nonoverhanging trees adjacent to the shoreline. The remaining 16% is composed of overhanging trees adjacent to the shoreline.	All of the drift cell was characterized as having a medium level of imperviousness.	KI-13-18 exhibits westward net shore-drift due to northeast fetch across Quartermaster Harbor and exposure to northeast winds crossing the topographic low at Portage. The cell extends from a divergence zone on the northeast shore of the Burton Peninsula, west to its terminus at a muddy sand spit and prograded beach along the south shore of the inner embayment (Schwartz et al. 1991). It measures just under a mile in length (0.96 miles, 5,083 ft), 67.7% of which is modified. A single sediment source located north of Burton Acres Park remains in this drift cell, accounting for 6.4% of the shoreline. An accretion beach and small spit have formed at the cell terminus, representing 3.9% of the drift cell. Eighteen percent of the KI-13-18 shore consisted of Feeder Bluff prior to nearshore development. Historic reconstruction indicated that another 13% of the drift cell was Potential Feeder Bluff. When comparing results of current conditions mapping with historic conditions, it is clear that at least 63% of the historic sediment sources in the drift cell have been lost due to residential bulkheads. Historic Accretion Shoreform mapping in this drift cell indicated that 21% of the KI-13-18 shore was historically accretionary in nature. Comparison of these results with those from current conditions mapping equates to an 81% loss of the historic AS in this drift cell.	63.30%	67.70%	Herring spawning occurs throughout this drift cell. The eastern half of this drift cell contains patchy eelgrass beds, while the other half does not have any eelgrass.		Medium		high	medium	KI-13-17 (Medium) & KI-13-19 (Low)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-19	Vashon	1,580	Approximately 85% of the drift cell's riparian vegetation is made up of landscaped grass. The remaining 15% is composed of nonoverhanging trees adjacent to the shoreline.	All of the drift cell was characterized as having a medium level of imperviousness.	Cell KI-13-19 measures 0.3 miles (1,580 ft) and extends from a divergence zone on the northeast shore of the Burton Peninsula, to a cusped spit on the east shore of the Burton Peninsula. Southeastward net shore-drift results from northeast fetch. Modifications were mapped along 60.6% of the KI-13-19 shoreline. No remaining sediment sources or transport zones were observed in this segment. An Accretion Shoreform was mapped along the southern portion of the drift cell, accounting for 39.4% of the cell. Forty-nine (48.8%) percent of this spit had modifications extending into the intertidal. Results of historic conditions analysis indicated that the pre-development low bank did not score high enough to be a significant sediment source, such that no obvious sediment sources have been lost due to bulkheading, though sediment would have been supplied by the existing low banks. Historic Accretion Shoreform mapping found no considerable discrepancy between historic and current conditions in this drift cell.	0.00%	60.60%	Herring spawning occurs throughout this drift cell. This drift cell's aquatic vegetation is composed of mostly patchy eelgrass.		Low			Low	KI-13-18 (Medium) & KI-13-20 (High)
KI-13-20	Vashon	30,641	Approximately 40% of the riparian vegetation is composed of overhanging trees adjacent to the shoreline. Another 13% is composed of nonoverhanging trees adjacent to the shoreline. 33% of the shoreline vegetation is composed of trees separated from the shoreline by houses and Vashon Hwy SW. Another 14% of the drift cell's riparian vegetation is made up of landscaped grass.	Approximately 55% of the drift cell was characterized as having a medium level of imperviousness, while the other 45% was characterized as having a low level of imperviousness.	KI-13-20 extends 5.8 miles north from the Neill Point, at the southwestern opening of Quartermaster Harbor, to the cusped spit at the easternmost point of the Burton Peninsula. Modifications were mapped along 51.8% of the KI-13-20 shoreline, mostly in the northern end. Feeder Bluffs were most frequently observed in the southern portion of the drift cell and accounted for 28.3% of the KI-13-20 shoreline. A single Exceptional Feeder Bluff was mapped at the drift cell origin at Neill Point, comprising 2.2% of the cell. In total four Accretion Shoreforms were mapped in KI-13-20, representing 15% of the drift cell. The Accretion Shoreform at the Fisher Creek delta has been augmented with sediment derived from the creek, leading to the progradation of a broad stream delta. – Prior to development of KI-13-20, 71% of the cell consisted of sediment sources. Results of historic conditions analysis indicated that KI-13-20 was comprised of 9% Feeder Bluff Exceptional and 62% Feeder Bluff. When compared with current conditions mapping this represents a 57.2% loss in sediment source length in the drift cell. Results of historic Accretion Shoreform mapping indicated that the length of AS in this cell has apparently increased (+ 280 ft) since pre-development conditions. A likely explanation for this discrepancy is the lack of detailed historic data sources enabling accurate identification of depositional open beaches and other AS types, as well as the presence of several large historic landslides in the drift cell. The frequency of landsliding very likely increased after the slopes were logged, causing deposition of considerable colluvium that possibly augmented Accretion Shoreforms.	57.20%	51.80%	Herring spawning occurs throughout this drift cell. There are five known surf smelt spawning beaches in this drift cell covering slightly over a third of the drift cell. The cell's aquatic vegetation is mostly made up of dense eelgrass beds with some patchy beds. Note that residents have stated that there used to be bullwhip kelp off the southern tip of the drift cell, but it is no longer present. There is one known bald eagle nesting site along the shoreline of this drift cell. There is also a known great blue heron nesting site along the shoreline of this drift cell.	The drift cell is fairly long for Vashon/Maury. The majority of the development occurs in the northern portion of the drift cell, while the southern half is far less developed.	High	High	high	High	KI-13-19 (Low) & KI-13-21 (Low)
KI-13-21	Vashon	4,850	Approximately 50% of the drift cell's riparian vegetation is made up of landscaped grass. Another 20% is composed of nonoverhanging trees adjacent to the shoreline. 20% is also composed of overhanging trees adjacent to the shoreline. The remaining 11% is composed of trees separated from the shoreline by houses.	Approximately 93% of the drift cell was characterized as having a medium level of imperviousness, while the remaining 7% was characterized as having a low level of imperviousness.	Influenced by southeasterly fetch, this cell has westward net shore-drift originating at Neill Point and terminating at the embankment at Tahlequah Creek. It measures 0.9 miles (4,742 ft), of which 72.5% is modified. Sediment sources were predominantly mapped within close vicinity of the drift cell origin near Neill Point. An Exceptional Feeder Bluff located at the divergence of KI-13-20 and KI-13-21 accounts for 14.2% of the KI-13-21 shoreline. Feeder Bluffs were mapped along the eastern portion of the cell where the shore was not bulkheaded, representing 9% of the drift cell. A single Accretion Shoreform was observed at the cell terminus making up only 2.8% of the drift cell. Prior to development the shores of KI-13-21 were 18% Feeder Bluff Exceptional and 50% Feeder Bluff. Another 13.4% of the shoreline was classified as Potential Feeder Bluffs. When compared with current conditions this equates to a loss of 66.6% of available sediment sources in the drift cell. Results of historic Accretion Shoreform mapping indicated that there has been no loss of accretion shoreforms in this drift cell, though it has been heavily modified.	66.60%	72.50%	Herring spawning occurs in the eastern half of this drift cell, and marks the western extent of known herring spawning. The aquatic vegetation of this drift cell is made up of mostly patchy eelgrass beds.	The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of shoreline armoring, loss of sediment sources and, the generally poor condition of the riparian area.	Medium		high	Low	KI-13-20 (High) & KI-13-22 (Medium)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-22	Vashon	4,867	Approximately 69% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. 20% of the vegetation is composed of shrubs adjacent to the shoreline. Another 4% is composed of nonoverhanging trees adjacent to the shoreline. The remaining 6% is composed of trees separated from the shoreline by houses.	Approximately 50% of the drift cell was characterized as having a medium level of imperviousness, while the other 50% was characterized as having a low level of imperviousness.	Originating approximately one half mile northwest of Point Dalco, this drift cell measures 0.9 miles (4,867 ft). Southwesterly waves approaching from the vicinity of the Tacoma Narrows produce eastward net shore-drift to the cell terminus at the bayhead beach at Tahlequah (Schwartz et al. 1991). This cell is characterized by steep, rapidly eroding bluffs and relatively scattered residential dwellings. Modifications were mapped along 42.7% of the KI-13-22 shoreline. Sediment sources were predominantly observed in the northern portion of the drift cell, where Feeder Bluff Exceptional was mapped along 40% of cell. Feeder Bluffs were also mapped in the cell, however with considerably less frequency, consisting of 9.9% of the drift cell. The only Accretion Shoreform mapped in this cell was at the bayhead beach in Tahlequah. This beach has suffered substantial modification and is now modified down into the intertidal. Results of historic analysis indicated that 62.9% of the KI-22 shore was a sediment source prior to development. Historic Accretion Shoreform mapping in this cell revealed that 20% of the drift cell was accretion shoreforms prior to nearshore development. A complex of several stream channel mouths (including Tahlequah Creek) historically encompassed the bayhead beach in Tahlequah, and just west of this feature was a depositional open beach. When compared with current conditions, a 79% loss of the historic Accretion Shoreforms has taken place.	20.60%	42.70%	Continuous or dense bullwhip kelp is located throughout this drift cell and extends into KI-13-23. This area is the only known location on Vashon-Maury Islands with a dense band of bullwhip kelp. Given the presence of deeper water along shore and fast currents, eelgrass is not found in bulk of this drift cell. There are no known forage fish spawning beaches in this cell.	The drift cell ranking is higher for basin context score than the CAO score because of newer information on the low amount of shoreline armoring and high quality condition of the riparian vegetation.	low			Medium	KI-13-21 (Low) & KI-13-23 (High)
KI-13-23	Vashon	23,777	Approximately 60% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. Another 10% is composed of nonoverhanging trees adjacent to the shoreline. 2% of the vegetation is composed of shrubs adjacent to the shoreline, while 6% is composed of landscaped grass. The remaining 22% is composed of trees separated from the shoreline by houses.	Approximately 65% of the drift cell was characterized as having a low level of imperviousness, while the other 35% was characterized as having a medium level of imperviousness.	Originating one-half-mile north of Point Dalco, this drift cell exhibits northward drift due to prevailing and predominant south to southwest wind-generated waves (Schwartz et al. 1991). The cell extends 4.5 miles north to its terminus at the prograded beach south of Sandford Point. Modifications accounted for only 28.4% of this drift cell. Sediment sources occurred throughout the drift cell, but were more concentrated south of Camp Sealth. Feeder Bluff Exceptional units comprised 13% of the total drift cell shoreline, while Feeder Bluffs made up 28.8%. Several Accretion Shoreforms were observed, consisting of 16.7% of the shores of this drift cell. Accretion Shoreforms were observed with greater frequency in the central and northern portions of the cell. Prior to development of the KI-13-23 shoreline 43.7% of the cell was comprised of sediment sources, with 14% Feeder Bluff Exceptional and 30% Feeder Bluff prior to nearshore modifications. Another 18.5% of the drift cell was classified as Potential Feeder Bluff. This signifies at least a slight (4.3%) loss of sediment sources since pre-development conditions. Historic Accretion Shoreform mapping indicated that 24% of KI-13-23 was AS prior to nearshore development. When these results are compared with current conditions, these results indicate that at least 20% loss of Accretion Shoreform length has taken place in KI-13-23.	4.30%	28.40%	There are three known sand lance spawning beaches in this drift cell. Continuous or dense bullwhip kelp is located in the southern portion of this drift cell and extends into drift cell KI-13-22. This area is the only known location on Vashon-Maury Islands with a dense band of bullwhip kelp. There is also a bed of patchy bullwhip kelp in the northern portion of this drift cell. The southern portion of the drift cell does not contain any eelgrass due to the currents and deeper water. However, the rest of the drift cell has mostly patchy eelgrass beds throughout. There are three known bald eagle nest sites along the shoreline of this drift cell.		High	High		High	KI-13-22 (Medium) & KI-13-24 (High)
KI-13-24	Vashon	2,150	All of the riparian vegetation is composed of overhanging trees adjacent to the shoreline.	All of the drift cell was characterized as having a low level of imperviousness.	This relatively short drift cell measures only 0.4 miles (1,955 ft). It originates approximately 1,200 ft north of Sandford Point and exhibits southward drift to a broad sand beach that marks its terminus. High gradient receding bluffs with very little development characterize this drift cell. Modifications were mapped along only 4.9% of this drift cell. Sediment sources were the predominant geomorphic unit in this cell. Feeder Bluff Exceptional units made up 73% of the cell, and another 20.1% consisted of Feeder Bluffs. No toe erosion was noted in the cell, however one large landslide was mapped in the northern portion of the cell, accounting for 46.7% of the shoreline. Accretion Shoreforms were infrequent, comprising only 2.1% of the cell. Results of historic conditions analysis indicated that all considerable sediment sources in KI-13-24 are currently intact, resulting in no loss of major sediment sources. Five percent of the cell that is currently modified scored as Potential Feeder Bluff, indicating that these shores may have contributed small quantities of sediment to the nearshore historically. Historic Accretion Shoreform mapping found no discrepancies between historic and current conditions in this drift cell.	0.00%	4.90%	The aquatic vegetation in this drift cell is composed of half patchy and half dense eelgrass beds. There are no known forage fish spawning beaches in this drift cell.		High			High	KI-13-23 (High) & KI-13-25 (High)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-25	Vashon	1,845	Approximately 90% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. The remaining 10% is composed of landscaped grass.	All of the drift cell was characterized as having a low level of imperviousness.	This cell encompasses the relatively intact Christensen Creek estuary and much of Christensen Cove. It exhibits northward drift and terminates at the prograded beach on the south side of Lisabeula. It measures 0.3 miles, 9.9% of which is modified. Feeder Bluffs were mapped along 22.7% of the KI-13-25 shoreline, primarily in the southern end of the cell. Another small Feeder Bluff was documented on the northern shore of the cell. Two Accretion Shoreforms were mapped, both in association with stream mouths. Cumulatively these beaches comprise 35.3% of the drift cell. Thirty-three percent of the KI-13-25 shore was Feeder Bluff prior to development and modification of the nearshore. When compared with current conditions this equates to a loss of at least 30.5% of the available sediment sources in this drift cell. Results of historic Accretion Shoreform mapping indicated that prior to development 48% of KI-13-25 was accretionary in nature. When comparing current and historic conditions, these results indicate that a 26% loss of accretion shoreform has occurred in 1991.	30.50%	9.90%	This drift cell's aquatic vegetation is composed of mostly dense eelgrass. There are no known forage fish spawning beaches in this drift cell.		High			High	KI-13-24 (High) & KI-13-26 (High)
KI-13-26	Vashon	3,626	Approximately 88% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. The remaining 12% is composed of landscaped grass.	All of the drift cell was characterized as having a low level of imperviousness.	Originating at a short zone of drift divergence approximately 600 ft south of the mouth of Green Valley Creek, this drift cell measures 0.7 miles (3,626 ft). Exposure to the northwesterly fetch results in southward net shore-drift in KI-13-26 (Schwartz et al. 1991). No modifications were mapped in this drift cell. Sediment sources were mapped as Feeder Bluff along the high gradient bluffs north of Lisabeula, representing 31.8% of the drift cell. A single Accretion Shoreform was observed in KI-13-26, located at the cell terminus. Consisting of 15.7% of the cell, this Accretion Shoreform was associated with a small stream mouth. Results of historic conditions analysis indicated that all sediment sources in KI-13-26 are currently intact, resulting in a no loss of sediment sources. Historic Accretion Shoreform mapping found a slight 1% (40 ft) discrepancy between historic and current conditions in this drift cell, which is likely due to an accuracy issue with the historic resources.	0.00%	0.00%	There are no known forage fish spawning beaches in this drift cell. A bed of patchy bullwhip kelp is found throughout this small drift cell. This drift cell's aquatic vegetation is composed of mostly patchy eelgrass. There are three bald eagle nesting sites found along the shoreline of this drift cell.		High			High	KI-13-25 (High) & KI-13-27S (High)
KI-13-27S	Vashon	653	Approximately 85% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. The remaining 15% is composed of landscaped grass.	All of the drift cell was characterized as having a low level of imperviousness.	This very small cell encompasses the southern shore of the embayment near the mouth of Green Valley Creek. It measures only 0.1 mile (652 ft), none of which was modified with bulkheading. Feeder bluffs were mapped along 26.6% of the KI-13-27-SW shoreline. An Accretion Shoreform created from sediment derived from Green Valley Creek and the convergence of KI-13-27NE and KI-13-27SW comprised 25.4% of the KI-13-27-S shoreline. Results of historic conditions analysis indicated that all sediment sources in KI-13-27 are currently intact, resulting in no loss of sediment sources. Historic Accretion Shoreform mapping found no discrepancy between historic and current conditions in this drift cell.	0.00%	0.00%	This drift cell's aquatic vegetation is composed of mostly dense eelgrass. There are no known forage fish spawning beaches in this drift cell.		High			High	KI-13-26 (High) & KI-13-27N (High)
KI-13-27N	Vashon	600	All of the riparian vegetation is composed of overhanging trees adjacent to the shoreline.	All of the drift cell was characterized as having a low level of imperviousness.	On the north shore of the Green Valley Creek embayment, southward net shore-drift resumes. The cell measures only 600 ft in length and is 77.6% Feeder Bluff. The Accretion Shoreform resulting from Green Valley Creek and the convergence of KI-13-27-NE and KI-13-27-SW represents 22.4% of the cell length. Results of historic conditions analysis indicated that all sediment sources in KI-13-27 remain intact, resulting in no loss of sediment sources. Historic Accretion Shoreform mapping found no discrepancy between historic and current conditions in this drift cell.	0.00%	0.00%	This drift cell's aquatic vegetation is composed of a fairly equal mix of patchy and dense eelgrass beds. There are no known forage fish spawning beaches in this drift cell.		High			High	KI-13-27S (High) & KI-13-28 (High)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-13-28	Vashon	17,982	Approximately 72% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. Another 13% is composed of nonoverhanging trees adjacent to the shoreline. Another 5% is composed of landscaped grass. The remaining 10% is composed of trees separated from the shoreline by houses.	Approximately 70% of the drift cell was characterized as having a low level of imperviousness, while the remaining 30% was characterized as having a medium level of imperviousness.	KI-13-28 originates north of the Green Valley Creek embayment and extends to its terminus at a symmetric cusped spit in (marked with "Light" on the USGS topographic map). KI-13-28 measures 3.4 miles in length, 27.7% of which is modified. Sediment sources were mapped by CGS throughout the drift cell. Feeder Bluffs comprised 44.3% of the cell. Accretion Shoreforms represented 11.4% of KI-13-28. Prior to development 50.3% of the KI-13-28 shore was comprised of sediment sources, all of which were Feeder Bluffs. Results of historic analysis suggest that another 11% of the cell was Potential Feeder Bluff. When compared with current conditions this equates to a loss of a minimum of 12% of the available sediment source length since historic or pre-development conditions. Results of historic Accretion Shoreform mapping indicated that prior to nearshore development 19% of KI-13-28 was accretionary in nature. When comparing these results with current conditions, it appears that a 41% loss of Accretion Shoreform has taken place in this drift cell.	12.00%	27.70%	There is one known sand lance spawning beach in this drift cell. This cell's aquatic vegetation is composed of a small bed of patchy bullwhip kelp located in the middle of this drift cell, with most of the cell consisting of patchy and dense eelgrass.	The drift cell ranking is higher for basin context score than the CAO score because of newer information on the low amount of shoreline armoring and high quality condition of the riparian vegetation.	Medium	High		High	KI-13-27N (High) & KI-11-7 (Medium)
KI-11-7	Vashon	2,483	Approximately 63% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. Another 7% is composed of nonoverhanging trees adjacent to the shoreline. Another 13% is composed of landscaped grass. The remaining 17% is composed of trees separated from the	Approximately 82% of the drift cell was characterized as having a low level of imperviousness, while the remaining 18% was characterized as having a medium level of imperviousness.	KI-11-7 exhibits southward net shore-drift and reaches its terminus at the symmetric cusped spit where it converges with KI-13-28. It measures approximately 0.5 mile in length, 51.3% of which is modified. Feeder bluffs were mapped along 24.2% of the drift cell, predominantly in the southern portion of the cell. Fourteen percent (14.2) of the cell was composed of Accretion Shoreforms. These depositional beaches were exclusively located at the spit located at the terminus. Results of historic conditions analysis indicated that all considerable sources of sediment in KI-11-7 are currently intact. However, 47.3% of the cell was classified as Potential Feeder Bluff, indicating that these shores likely contributed some additional volume of sediment to the drift cell prior to modification. Historic Accretion Shoreform mapping found no discrepancy between historic and current conditions in this drift cell.	0.00%	51.30%	This drift cell's aquatic vegetation is composed of mostly dense eelgrass, with some patchy eelgrass beds. There are no known forage fish spawning beaches in this drift cell.	The drift cell ranking is lower for basin context score than the CAO score because of newer information on the amount of shoreline armoring, that was located along likely sediment sources.	High			Medium	KI-13-28 (High) & KI-11-6 (High)
KI-11-6	Vashon	4,517	Approximately 48% of the drift cell's riparian vegetation is made up of non-overhanging trees adjacent to the shoreline. Another 38% is composed of overhanging trees adjacent to the shoreline. Another 14% is composed of landscaped grass.	Approximately 85% of the drift cell was characterized as having a low level of imperviousness, while the remaining 18% was characterized as having a medium level of imperviousness.	Exhibiting northward drift, this cell extends 0.8 miles north from a divergence zone in common with KI-11-7 and terminates at the asymmetric cusped spit at Peter Point. Twenty-five (25.5%) percent of the KI-11-6 shoreline is modified. Sediment sources were mapped along the high gradient bluffs in the northern and central portions of the cell, as well as in close vicinity to the cell origin. Feeder Bluffs made up 23.3% of the cell. Shoreforms comprised 39.6% of the shoreline in KI-11-6. Results of historic conditions analysis indicated that all considerable sources of sediment sources in KI-11-6 are currently intact, resulting in no loss of sediment sources. However results of the historic classification indicated that prior to modification 11% of the drift cell was Potential Feeder Bluff, which likely contributed some sediment to the nearshore in the past. Historic Accretion Shoreform mapping indicated that prior to development 46% of the KI-11-6 shore was accretionary in nature. When comparing	0.00%	25.50%	This drift cell's aquatic vegetation is composed of mostly patchy eelgrass, with some dense eelgrass beds. There are no known forage fish spawning beaches in this drift cell.	The drift cell ranking is higher for basin context score than the CAO score because of newer information on the low amount of shoreline armoring, intactness of sediment sources and high quality condition of the riparian vegetation.	Medium			High	KI-11-7 (Medium) & KI-11-5 (Medium)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-11-5	Vashon	2,933	Approximately 57% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. Another 30% is composed of nonoverhanging trees adjacent to the shoreline. Another 8% is composed of landscaped grass. The remaining 4% is composed of trees separated from the	Approximately 73% of the drift cell was characterized as having a low level of imperviousness, while the remaining 27% was characterized as having a medium level of imperviousness.	This cell originates west of the Fern Cove delta and exhibits southwestward net shore-drift in response to principle northerly fetch. It terminates and converges with KI-11-5 at Peter Point. This cell measures one-half mile, 56.0% of which is modified. Feeder Bluffs were mapped throughout the drift cell, accounting for 30.7% of the drift cell length. A single landslide was noted, representing 1.2% of the cell. The cell terminates at Peter Point, the only Accretion Shoreform in the cell, which represents 9% of shoreline. Prior to development along the shore of KI-11-5, 39% of the drift cell was comprised of Feeder Bluffs. Another 38% of the shore was classified as Potential Feeder Bluffs. When compared with current conditions this equates to a minimum of 21.7% loss of sediment sources in the drift cell. Historic Accretion Shoreform mapping found a slight 1% (25 ft) discrepancy between historic and current conditions in this drift cell, which is likely due to an accuracy issue with the historic resources.	21.70%	56.00%	There is a general lack of aquatic vegetation in this drift cell. There are no known forage fish spawning beaches in this drift cell.	The drift cell ranking is higher for basin context score than the CAO score because of newer information on the low amount of shoreline armoring, intactness of sediment sources and high quality condition of the riparian vegetation.	Low			Medium	KI-11-6 (High) & KI-11-4 (Medium)
KI-11-4	Vashon	1,313	Approximately 39% of the drift cell's riparian vegetation is made up of overhanging trees adjacent to the shoreline. Another 25% is composed of nonoverhanging trees adjacent to the shoreline. Another 36% is composed of landscaped grass.	Approximately 64% of the drift cell was characterized as having a medium level of imperviousness, while the remaining 36% was characterized as having a medium level of imperviousness.	Eastward drift into Fern Cove dominates this 0.25-mile drift-cell. Modified shoreline makes up 54.9% of the cell. The remaining portions are predominantly accretionary with a very small segment of transport zone west of the mouth of Shingle Mill Creek. No nearshore sediment sources were mapped in this unit, though Shingle Mill Creek nourishes the beach with fine sediment. Accretion Shoreforms represent 36.6% of KI-11-4, 55% of which are associated with Shingle Mill Creek, which contains a small pocket estuary and salt marsh. Results of historic conditions analysis do not point to any historic sediment sources. Historic Accretion Shoreform mapping indicated that there has been a net increase of Accretion Shoreforms in this drift cell since pre-development conditions (Map 14, Tables 12 and 13). The most likely reason for the increase in accretion shoreforms and the lack of sediment sources is the lack of detailed historic resources. Historic mapping does however include the Fern Cove estuary, which encompasses 27% of the drift cell.	0.00%	54.90%	There are dense eelgrass beds in the eastern half of the cell, with no aquatic vegetation in the western half. There are no known forage fish spawning beaches in this drift cell.	The drift cell ranking is higher for basin context score than the CAO score because of newer information on the relative intactness of sediment sources and condition of the riparian vegetation.	Low			Medium	KI-11-5 (Medium) & KI-11-3 (Medium)
KI-11-3	Vashon	2,600	Approximately 81% of the drift cell's riparian vegetation is made up of nonoverhanging trees adjacent to the shoreline. Another 13% is composed of overhanging trees adjacent to the shoreline. Another 6% is composed of landscaped grass.	Approximately 82% of the drift cell was characterized as having a medium level of imperviousness, while the remaining 18% was characterized as having a medium level of imperviousness.	Originating approximately 0.5 mile north of Fern Cove, this drift cell exhibits southward net shore-drift into Fern Cove and terminates at a sand, granule, and pebble spit along the east shore of the inner cove (Schwartz et al. 1991). Low bank shoreline with residential development and intermittent riparian vegetation characterizes this drift cell. Modifications were mapped along 48.3% of the cell. No sediment sources were observed in this drift cell. Two transport zones were mapped in the north and central portions of the cell. These units account for 21.7% of the KI-11-3 shoreline. Accretion Shoreforms, representing 30.1 % of the cell, were mapped at the cell terminus where a pocket estuary and rehabilitated salt marsh is present. Results of historic conditions analysis indicated that all sediment sources in KI-11-3 are currently intact, resulting in no loss of sediment sources. Prior to development 32% of the KI-11-3 shore was accretionary in nature. Fifteen percent of the historic condition of the drift cell was comprised of depositional open beaches, while the remaining 18% was associated with the Fern Cove estuary (stream mouth). When compared with current conditions mapping these results indicate that at least a 7% loss of Accretion Shoreform has taken place in KI-11-3.	0.00%	48.30%	This drift cell's aquatic vegetation is composed of dense eelgrass beds. There are no known forage fish spawning beaches in this drift cell.	The drift cell ranking is higher for basin context score than the CAO score because of newer information on the relative intactness of sediment sources and condition of the riparian vegetation.	Low			Medium	KI-11-4 (Medium) & KI-11-2 (Low)

Marine

Drift Cell number	Island	Length (ft)	Land cover / forest	Road density / impervious surfaces	Geomorphology (from Johannessen et al 2004)	% of Sediment Sources lost	% of shoreline classified as modified	Known key biological values (forage fish, eelgrass, marshes,	Remarks	CAO Rating	WRIA Rating (Anchor)	WRIA Rating (CGS)	Basin (Drift cell) Context Rating	Adjacent Basin (Drift cell) condition
KI-11-2	Vashon	9,051	Approximately 44% of the drift cell's riparian vegetation is made up of landscaped grass. Another 37% is composed of nonoverhanging trees adjacent to the shoreline. Another 11% is composed of trees overhanging the shoreline. The remaining 8% is composed of trees separated from the shoreline by houses.	Approximately 61% of the drift cell was characterized as having a low level of imperviousness, while the remaining 39% was characterized as having a medium level of imperviousness.	This cell originates at a drift divergence immediately north of Fern Cove where the prevailing and predominant southwesterly waves overcome the wave shadow in Fern Cove (Schwartz et al. 1991). Northward net shore-drift extends to the drift cell terminus at a prograding beach at Point Vashon. This cell measures 1.7 miles in length, 62.9% of which is modified. Most of the southern and middle portions of the drift cell have thick deposits of Vashon advance outwash deposits in the bluff, but much of this area is either bulkheaded or fronted by an Accretion Shoreform. Two Feeder Bluffs were mapped in this drift cell, accounting for 5.8% of the shoreline. Both of these sediment sources were located in the northern half of the cell. Accretion Shoreforms were mapped at Sandy Beach and at the cell terminus at Point Vashon. Most of the Accretion Shoreforms in this drift cell have been modified in some way. Results of historic conditions analysis indicated that all sediment sources in KI-11-2 are currently intact, resulting in no loss of sediment sources. Historic Accretion Shoreform mapping indicated that prior to development 27% of this cell was accretionary in nature. Historic Accretion Shoreforms consisted of 9% depositional open beach and 19% longshore lagoon. Compared to current conditions, these results indicate that a 10% loss of Accretion Shoreform has occurred in this drift cell, possibly due to	0.00%	62.90%	This drift cell's aquatic vegetation is composed of mostly patchy eelgrass, with some dense eelgrass beds. There are no known forage fish spawning beaches in this drift cell. There is one known bald eagle nesting site along the shoreline of this drift cell.	There are many groins in this drift cell.	Low			Low	KI-11-3 (Medium) & KI-11-1 (Low)
KI-11-1	Vashon	1,338	All of the riparian vegetation is composed of trees separated from the shoreline by houses	Approximately 97% of the drift cell was characterized as having a medium level of imperviousness, while the remaining 3% was characterized as having a medium level of imperviousness.	This very short cell measures only 0.22 miles (1,168 ft) and exhibits westward transport. Schwartz et al. (1991) describes this cell as a zone of high wave energy that prevents the depositional beach at Point Vashon from further northward development onto a wave-cut clay platform along the north shore of Vashon Island. A single Feeder Bluff is found at the eastern end of this cell, representing 12.7% of the drift cell. The large majority of the cell is bulkheaded, but much of this area was interpreted as Accretion Shoreform. Accretion Shoreforms were the dominant shore type in KI-11-1, consisting of 87.3% of the short cell. These Accretion Shoreforms are densely developed and armored into the intertidal zone. Results of historic conditions analysis indicated that all sediment sources in KI-11-2 are currently intact, resulting in no loss of sediment sources. Historic Accretion Shoreform mapping indicated that there was no historic Accretion Shoreforms in this cell. When compared with current conditions mapping it appears that a substantial increase in Accretion Shoreform has taken place since pre-development conditions. The most likely reason for this is the lack of detailed historic resources that enable accurate identification of depositional open beaches. Air photo analysis is particularly challenging on north facing slopes, such as those in KI-11-1.	0.00%	0% (note that most of the shoreline was classified as a modified accretion shoreform)	Patchy bullwhip kelp is found throughout this drift cell and no eelgrass. Given the deep intertidal fill, it is not surprising that there are no known forage fish spawning beaches in this drift cell.		Low			Low	KI-11-2 (Low) & KI-12-1 (Medium)